S. HRG. 106–954

HIGHWAY DIESEL FUEL SULFUR REGULATIONS

HEARING

BEFORE THE

SUBCOMMITTEE ON
CLEAN AIR, WETLANDS, PRIVATE PROPERTY AND
NUCLEAR SAFETY

AND THE

COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

ONE HUNDRED SIXTH CONGRESS

SECOND SESSION

JUNE 15, 2000

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C O N T E N T S

HIGHWAY DIESEL FUEL SULFUR REGULATIONS

THURSDAY, JUNE 15, 2000

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON CLEAN AIR, WETLANDS, PRIVATE PROPERTY, AND NUCLEAR SAFETY,
Washington, DC.

The subcommittee met, pursuant to notice, at 9:30 a.m., in room 406, Senate Dirksen Building, Hon. James M. Inhofe (chairman of the subcommittee) presiding.

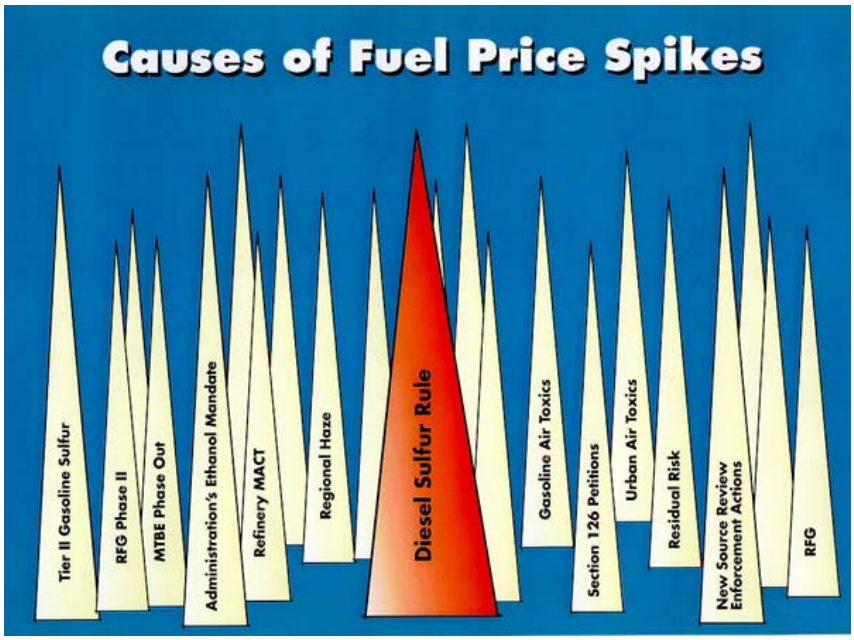
OPENING STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Senator INHOFE. The meeting will come to order.

With today's hearing, we will address the proposed sulfur and diesel regulations from EPA. Yesterday, I entered my opening statement by telling a little story which I am not going to repeat today.

For some reason, the EPA is shocked and surprised that fuel prices are spiking in the Midwest because of the introduction of the new RFG Phase II regulations. Incidentally, there are some articles in today's paper that we'll be talking about in a few minutes that do relate to the cost of fuel that everyone is so concerned about today.

The trouble is that EPA continues to roll out new restrictions in regulations on gasoline and gasoline formulas without any regard to what the consequences are to the consumer. I have a chart that shows just a few of the recent regulations such as the Tier II RFG and the Administration's ethanol proposal and many others. These regulations are some of the main reasons for the price spikes that we are seeing in fuel costs.



I want to make sure Andy shows that one because he spent a lot of time working on it. Those are price spikes.

Today's sulfur-diesel regulation is a perfect example of this regulation which will cause price spikes for fuel over the next 10 years. EPA has done a miserable job in predicting the consequences of this regulation. I believe there will be severe shortages of diesel fuel which will lead to higher prices for truckers, farmers and the home heating market. It is highly likely that instead of installing the expensive desulfurization equipment, many companies will choose to export their diesel instead of selling on the U.S. market and create great shortages or might even move to other areas such as Mexico.

The real shame in this is that it could be avoided if EPA were more reasonable in their expectations. Instead of calling for a 97-percent reduction in sulfur, they could have taken a 90-percent reduction in sulfur which would have produced the same benefits for particulate matter at half the cost.

While it is true that NO_X would only be reduced by 75 percent instead of 95 percent, I think we need to stop and look at the 75 percent reduction at half the cost which could be a bargain and I think it would be. Once again, the EPA appears bent on chasing pennies of benefits for dollars of cost.

On a final note, last year during the sulfur and gasoline debate, the refiners were pretty much split on the issue. The large companies didn't mind and in fact, they may have seen a competitive advantage against the smaller companies. Today, almost without exception, all refiners are telling me that this proposed rule is just not feasible. I hope the EPA will be listening and that is the reason for our hearing today.

In addition to today's hearing, over the next few months, my subcommittee will be looking even more closely at the cost of EPA's programs on our Nation's fuel supply. I really think the lasting legacy of Carol Browner might very well end up being these gasoline price spikes over the next 10 years unless something is done to restore some sanity to this process.

In today's newspaper, we have seen a lot of concern about this and people are no longer taking the popular route and trying to blame the oil companies and the refiners for the problems. For example, in this morning's Washington Times, an editorial appears, "EPA Gouges Consumers" where the price of a gallon of unleaded regular has topped the $2 mark. The real crime is the way the EPA imposes multiple-tiered regulatory costs invisible to consumers on motor fuels. These costs are borne by consumers who blame the oil companies but they ought to be blaming the Federal regulators instead.

It goes on to say, "EPA, as pointed out on this page last week, is under no constraint to factor in the cost of the regulations it promulgates. It issues dictates that let the marketplace worry about who is going to pay for all this and how much it is going to cost." That is one of the things we have talked about for a long time, that we need to be looking at costs. That is what cost-benefit analysis is all about so at least the public knows what the cost is going to be for some of these regulations. Then they can make determinations as to whether or not it is going to be worth that cost.

Governor George Ryan of Illinois yesterday had a news conference in which he called on the Federal Government to suspend environmental rules mandating cleaner burning gasoline which he blames for driving pump prices in parts of the Midwest above $2 a gallon, the highest in the United States.

[The referenced articles follow:]

[From the Washington Post, June 15, 2000]

ILLINOIS SEEKS THE SUSPENSION OF NEW EPA GASOLINE RULES

GOVERNOR SAYS STANDARDS DRIVING PUMP PRICES TOO HIGH

(By William Claiborne)

CHICAGO, July 14—Illinois Governor George H. Ryan (R) today called on the Federal Government to suspend environmental rules mandating cleaner-burning gasoline, which he blamed for driving pump prices in parts of the Midwest above $2 a gallon, the highest in the United States. Ryan blamed the high Midwestern pump prices, particularly in Chicago and Milwaukee, on Environmental Protection Agency gasoline production rules that went into effect June 1 in scattered locations across the country. The regulations are aimed at curbing toxic emissions.

Ryan said that while the EPA's anti-pollution goals were laudatory, the agency should delay mandating an improved version of so-called reformulated gasoline until governments in the region can study the impact on prices.

Under the reformulated gasoline program, the base fuel is mixed with either ethanol or the chemical agent MTBE, an oil-based substance that has been found to pollute groundwater supplies. Most Midwestern States have opted to use ethanol. Ryan said he had talked with the Governors of Wisconsin, Indiana, Nebraska and Kansas, and that all of them support the rules suspension proposal.

Ryan said refineries in the Midwest could revert to producing an earlier version of cleaner-burning reformulated gasoline, which he said could be sold more cheaply than the new version.

"This current craziness in prices doesn't make any sense," Ryan told a news conference here. "I can't understand why we should pay 80 cents a gallon more for gas than other parts of the country."

A Clinton Administration official said the waiver request is before the EPA and, for now, the White House has no comment.

Last week, the average price of self-serve gasoline in Chicago was $2.13 a gallon, up from $1.37 a gallon in January. In contrast, prices averaged $1.56 a gallon in Los Angeles, $1.42 in Atlanta and $1.61 in Boston.

Some downtown service stations here were charging $2.39 a gallon for regular gasoline and $2.59 a gallon for self-serve premium, meaning that filling a 44-gallon tank in a sport utility vehicle costs more than $114.

Industry officials attributed the rising prices to market and regulatory forces that they say converged just as the start of the summer driving season began to put a strain on gasoline inventories.

The officials said the most significant of these was the June 1 implementation of a new Federal requirement for a cleaner-burning reformulated gasoline—called RFG–2—which in the Midwest entails the use of corn-based ethanol as an additive and is more difficult to blend than earlier versions of reformulated fuels. Urvan Sternfels, president of the National Petrochemical and Refiners Association, today said refiners had made the "unpleasant discovery" that because ethanol evaporates more quickly than other additives, the blending process required complicated—and costly—adjustments to a process with which the refiners had little experience.

However, environmental groups such as the Clean Air Trust have demanded to know why the oil companies failed to provide for adequate supplies when they had known for 5 years they would have to make the cleaner-burning gasoline available to consumers by June 1.

Sternfels also said the rupture of an oil pipeline near Dallas, a pipeline that Midwest refineries had used to buildup their inventories, had contributed to the price surge. "It slowed down the system and put us behind the curve in terms of supply." Sternfels said.

He also said that court decisions upholding patents awarded to California-based Unocal Corp. on reformulated fuel blending processes have had a "chilling effect" on many refineries, which are worried about having to pay royalties of as much as 7.5 cents a gallon if their processes are too similar to Unocal's.

All of these factors have combined to tighten the supply of reformulated gasoline, making the market nervous and forcing prices upward, Sternfels said.

However, Energy Department officials said that while stocks of reformulated gasoline were tight nationally 41.4 million barrels, or 3.3 million barrels fewer than last June—Midwest stocks were at 2 million barrels, slightly more than at this time last year.

Robert Perciasepe, the EPA's assistant administrator for air and pollution programs, said this week after meeting with officials from eight major oil refineries that while gasoline supplies are lower than normal nationally, there is enough fuel to keep prices in check. He said reformulated gasoline costs only 5 to 8 cents a gallon more to produce than conventional gasoline.

[From the Washington Times, June 15, 2000]

EPA GOUGES CONSUMERS

The Environmental Protection Agency (EPA) is investigating possible "price gouging" in the Midwest—where the price of a gallon of unleaded regular has topped the $2 mark. But the real crime is the way EPA imposes multitiered regulatory costs—invisible to consumers—on motor fuels. These costs are borne by consumers—who blame the oil companies. But they ought to be blaming Federal regulators instead.

The recent spike in gasoline prices is to a great extent attributable to changes in the regulations governing the refining of gasoline from crude oil. The new process—by which supposedly "cleaner," "reformulated" gasoline is produced—have driven per-gallon costs up by a dime or more during the past few weeks alone. That and pre-existing regulations governing the way motor fuels are produced have added 25-cents or more to the total per-gallon cost of regular unleaded. Throw in Federal and State taxes—ranging from 40 cents per gallon to more than 75 cents—and one quickly sees why gasoline is becoming so expensive. It has little to do with the oil companies—and a lot to do with government, at all levels.

Ostensibly, we do get improvements to the roads from motor fuels taxes—so we won't quibble overmuch with them. However, "environmental taxes," if you want to call them that, are another matter. These are often of dubious benefit—and frequently very expensive to boot. EPA, as was pointed out on this page last week, is

under no constraint to factor in the costs of the regulations it promulgates; it simply issues diktats and lets the marketplace worry about how all this will be paid for.

Worse, though, are the unforeseen side effects of EPA's regulatory polices. Until quite recently, for example, EPA required the use of so-called "oxygenated" fuels in many areas, most of them heavily urbanized, as a means of controlling vehicle exhaust emissions and thereby improving air quality. However, one of the chief chemicals used to oxygenate the fuel—a compound called Methyl Tertiary Butyl Ether, or MTBE—has been identified as a health hazard and contaminant of drinking water. EPA had been warned of the potential risks of MTBE—both before and during its introduction as a motor fuels additive. The warnings were ignored. Result? Motorists paid 5 to 10 cents more per gallon for oxygenated fuels that not only tainted their water supplies, but which did next to nothing to improve air quality. Studies found that MTBE/oxygenated fuels had little or no effect on the emissions output of late model cars; they simply got worse fuel economy than before—because the oxygenated fuels had diminished energy content as compared with non-MTBE/ oxygenated fuels.

This object lesson in the sagaciousness of EPA bureaucrats should be borne in mind as we contemplate rising gas prices and the introduction of the purportedly miraculous "reformulated" gasolines. The new witches' brew is costing us more at the pump—and may cost us something else, too. But we may not know about that until a few years have gone by—as happened with MTBE.

These are things, Mr. Perciasepe, that people are now taking a little different attitude toward than they were just a month or two ago, and certainly a couple of years ago.

With that as an opener, we will go ahead and recognize you for your opening statement. I think we will have a pretty good turnout. They are just not here yet. If you will go ahead and start?

STATEMENT OF ROBERT PERCIASEPE, ASSISTANT ADMINISTRATOR, OFFICE OF AIR AND RADIATION, ENVIRONMENTAL PROTECTION AGENCY

Mr. PERCIASEPE. Mr. Chairman, first of all, thank you very much for the invitation to be here today.

May I ask one question of the chair, before I continue?

Senator INHOFE. Yes, of course.

Mr. PERCIASEPE. Could I have a few extra minutes, like 2 or 3 extra minutes to do a little discussion on some of the points you made in your opening comments?

Senator INHOFE. We were going to give you 5 minutes, so 8 minutes. I appreciate that because I want you to address these.

Mr. PERCIASEPE. Thank you, sir. I want to get to the diesel thing first and then I will address that.

Senator INHOFE. When I talked about these, I recognize we are not necessarily talking about diesel and diesel is the subject for today's hearing but when you talk about MTBEs, sulfur and gasoline, which we have already dealt with in diesel, it is still all costs and it's all fuel and it's of equal concern to the public.

Mr. PERCIASEPE. I understand why you are making that point. You pointed out one of the points I wanted to start with and that is that we have been working on automobile and gasoline regulations for many years. As you already pointed out, last December we finalized a rule on gasoline, sulfur and automobile emission standards to be implemented over the next decade. I felt very good about the process we went through and we worked very hard with both the automobile industry and the oil industry.

While I don't think we have made everybody completely happy in the way that came out, I think we did a job there where we tried to recognize the majority of the issues that were brought to us. I

want to assure the Chair we want to approach the diesel rule with that same kind of vigor.

On a numeric level, we are actually starting closer than we did on gasoline. With gasoline, we started at 150 ppm to 30 ppm, and here we are starting from 50 ppm to 15 ppm, but the gulf is bigger as you will hear today in terms of the views of this, and I recognize that.

I need to always give the underlying reasons why we are doing this. First of all, from a public health perspective, we have 42 areas in the country with 123 million people that are at risk of violating the 1-hour ozone standard in 2007 and after, 10 areas with 27 million at risk of violating the PM_{10} standard and diesel exhaust is a likely human carcinogen at the environmental levels of exposure according to a draft assessment that is still going through review. Other organizations have made those findings as well.

On the environmental health side, in the country we have broad areas in the West and the East that experience visibility impairment; we have forest and crop damage from air pollutants, acid rain, and eutrophication of water bodies.

When we look specifically at the heavy duty fleet—and we talk about diesel and gasoline engines in the heavy duty fleet but it's well over 90-percent diesel engines—nationwide this fleet contributes the emissions about 29 percent of the NO_X and about 14 percent of the PM in the local emissions inventory, but you can see in some cities like Albuquerque and Washington that it varies either up or down from the national average depending on the local conditions. In some cities on very local levels, on bus routes and on truck routes, you will find even higher levels of exposure.

Before we leave that chart, I want to make a very important point. I think we try to make this point very clear in our proposal. When you look at the diesel engine part of the rulemaking that we are in the process of taking public comment on, diesel engines are extremely important to the American economy. These engines are durable and they are fuel efficient. EPA in no way wants to jeopardize the long term use of that kind of a power plant for commerce in the United States.

What we want to do is add the term "clean" to that description of these engines and that is within our grasp as I think you will hear today from some of the witnesses.

What will happen with our proposal? This is a chart that shows up to 2030, the national emission level in millions of tons a year of nitrogen oxide with and without the proposed standards. You have mentioned the 50 ppm and 75 percent instead of 90 percent. Our analysis shows that if we don't get to the levels we are talking about and have the kinds of pollution control equipment similar to what we have been doing to cars for the last 30 years applied to these kinds of engines, the technology is only going to get about a 20 percent reduction. So you are going to have a line that is up here, not almost down here. It is virtually on and off switch.

So you will hear that a 90-percent reduction in sulfur is almost as good as a 97-percent reduction. That is not true, it is going to result in a 20-percent pollution reduction instead of over 90-percent pollution reduction. It is actually less cost effective for overall pol-

lution reduction and it has a bigger fuel economy hit, the technologies that are involved with that.

You will see the same kind of effect with PM emissions. I will just point out here that one of the things you will also hear today is that the equipment to do this isn't really available. Again, I don't think that is the case. Soot traps that would be able to achieve this are available, have been used and they are not used everywhere but with the proper fuel, they can achieve these standards.

On the NO_X numbers we saw earlier, the technology is now making very good strides in laboratories and field tests and also is used on stationary diesel sources.

What we have in this proposal is a national program for heavy duty vehicles. It is a vehicle and fuel regulated as a system to optimize the cost-effective approach to reducing pollution from these sources. PM standards would apply in 2007 and the NO_X standards would phase in, just like we did with the cars, between 2007 and 2010. It has a 15 ppm sulfur cap for high weight diesel fuel by June 2006, with some implementation flexibilities.

I want to add that we explore in our proposal many specific options for small refiner and farm co-op flexibility. We are dedicated to continue working with those groups. We started dialog. As we are putting the proposal together, we want to work with them through the comment period and afterward as we get to the end of the year and we plan to continue to do that and work on ideas. I can go into those in the questions and answers.

We also know that now that Europe is looking at between 10 and 15, Germany has already done that. We believe that the technology is enabled by these levels of fuel. You will hear that some people think it should be lower as well. Again, we are taking comment on all these issues.

I would like to close here by simply saying, as I opened, like Tier II gasoline, sulfur and diesel, we want to work with all the stakeholders to build a program that is going to be implemented. We think there are ideas out there for additional flexibility on how it gets implemented but we want to do it right. Some of them could be problematic—we know that—and that is why we have yet to put them in the formal proposal but we want to work with everybody to work through that.

I am going to stop there on the diesel. That is an outline of why we are doing it, what we think the effects are. If you might indulge me for 2 or 3 minutes on the RFG situation, I would appreciate it.

We too are very concerned about the price of gasoline related to reformulated gasoline, but I want to give you some national statistics from the Energy Information Agency as of Monday of this week. I know prices are changing so fast that Monday is out of date but I will put it in context back to November of last year.

Conventional gasoline in the United States in November last year averaged $1.25. The average across the country of conventional gasoline regular grade on June 12, Monday of this week, was $1.61, a 29-percent increase since last November.

RFG was at $1.29 last November and on a national average is at $1.67 on Monday, a 29 percent increase. The differential increase in RFG average prices in the United States is no different than for conventional gasoline. Indeed the $1.67 to $1.61 is about

what we would estimate the cost differential would be in Phase II, about 4 to 8 cents. This varies in different areas of the country.

One last thing I want to point out is that if you look at 100 percent of the gasoline in the United States on Monday, 70 percent of it was conventional gasoline. At the regular grade, the price was between $1.61 and $1.67. If you take Chicago and Milwaukee, about 3.4 percent of the Nation's gasoline—out of the averaging system for RFG, RFG in the United States is not $1.67 but less than that because you take those two markets out. The average price for RFG comes down between $1.63 and $1.64 which includes some areas that are using ethanol like St. Louis and Louisville.

We see the problem in Chicago and Milwaukee. We are trying to understand more completely why that cost differential exists. We still do not believe that it is the cost of producing RFG that is causing that differential. We think it is more related to other supply issues and preparation in advance of the rule implementation date to be prepared for the demand.

We are going to continue working with the Department of Energy on that but I want to make it clear that the prices of gasoline rising in the United States are not because of the RFG implementation that started on June 1.

I will stop there.

Senator INHOFE. Mr. Perciasepe, we have a statement from the Coalition of Sixteen Refiners, led by Gary Williams, which is located in Oklahoma. I am entering their statement in the record and I will read part of it to you:

"We worked diligently with the SBRFA panel to outline the complex range of problems and circumstances facing the small refiner group and to underline as strongly as possible that there is no one solution that will enable all small refiners to survive.

"Although we appreciate EPA's discussion of small refiner issues in the preamble to the rulemaking, we are extremely disappointed and concerned that the proposed rule itself included no accommodations for those companies. It is mentioned in the preamble but not in the rule itself.

"We must have a menu of options which recognizes small business refiners' varying circumstances. Most importantly, we must have help in accessing the capital required to install this desulfurization equipment through tax credits, loan guarantees and other incentives."

They go on to say, "The extraordinary costs involved will result in some refinery shutdowns, reduced domestic refining capability and less competition in the marketplace."

I guess I would ask what are your ideas within the rules that you are discussing right now, and what help is there for these people because what you just said talking about the effect of price, to me the greatest effect is going to be when we end up having to shutdown or move refineries elsewhere and so the supply drops and obviously the demand is still there and the price is going to go up very dramatically. What is your thinking?

Mr. PERCIASEPE. We are as committed to small refinery flexibility as we were when we did the gasoline sulfur rule. It obviously is a more difficult challenge with the diesel desulfurization program.

The rule does include a general hardship provision now which was something that was discussed in the SBRFA panel and something we did in the proposed rule and something we did on the gasoline sulfur rule. As that letter said, it was hard to coalesce around any set of silver bullets for the appropriate flexibility for small refiners and I want to throw farm co-ops into that also because we have had some unique discussions with them as well.

Senator INHOFE. We will have them represented in the next panel.

Mr. PERCIASEPE. So what we have done is we've tried to take the menu that was developed from that process of ideas and develop them further through the comment process. We are obviously going to have to get back and work on that.

There was the general hardship provision that was included in the proposal but some of the ideas that are in the proposal include things and every one of these has problems, I don't want to say any of these are silver bullet, but some include voluntary phase-in ideas where you don't have to have 100 percent of this fuel on day one.

We didn't put that in the proposal and you are going to hear people worried about it today, but we didn't put that idea in the proposal because we think we need to do a lot more work to figure out how that would work and not create more problems than it solves.

Senator INHOFE. But wouldn't it be a good idea to extend the comment period then. If more work needs to be done, you need to also have more input to assist you with that?

Mr. PERCIASEPE. I think we have a pretty lengthy comment period and public hearings all around the country. The comment period is going to go well into August. We've developed these ideas pretty extensively in the preamble and laid out how they might work.

Let me get to one of the other ideas which I think has some merit. Because of the nature of desulfurization of diesel fuel and the relationship to the control technologies on the compression-ignition-type engines, we are talking about the fuel specifications with respect to the control technologies. In gasoline, if there is a variability in the fuel, one can factor in a differential performance of the control technologies. For diesel, it is an ''on/off switch,'' and it could cause problems with the operation of the engine. We do not want to do something that is going to cause a durability or performance standard problem in the field. These vehicles have to perform.

One of the ideas we are looking at is for certain categories of refiners perhaps to provide an additional flexibility on gasoline where a small volume of that being delayed even further might be able to provide the ability to sequence these more appropriately at that individual refinery. This is an idea we are also taking comment on. I am just trying to give you some of the ideas.

Senator INHOFE. Yes, you have ideas of things you are working on right now but I guess my question would be, when you get all this figured out, why then wouldn't it be a good idea to go ahead and reissue and allow a comment period then because they would have a better idea of what to comment on when you develop this a bit further? You have decisions to make that aren't made yet.

Mr. PERCIASEPE. We have made commitments to build flexibility into the rule. We have outlined the approaches that we think are

worthy of continued work. We think we are going to get quality comments on those and whether or not there needs to be any kind of reproposal or supplemental proposal will be determined by the Administrative Procedures Act.

Senator INHOFE. There are a couple of members that are not here. One was wanting to talk about the technology review. Let me kind of shift to that.

In your testimony you mentioned that the NO_X adsorbors "have not yet developed to the point where they are being used in demonstration fleets." In fact, I understand you built into the rule a technology review in 2003 to determine if the technology will be available at that time. Is that correct?

Mr. PERCIASEPE. It is in the preamble. We don't have it in the proposed rule. We suggest in the preamble that this is an option that we might want to hear about in the comment period and we want to hear from the manufacturers of the equipment on what they think about this concept.

We did the exact same thing in the desulfurization of gasoline and the control technologies for Tier II cars. We put in the preamble the idea of a technology review. We got lots of comment on it. At the end, there was an agreement that it wouldn't be worth doing. On this one, we are not at that point yet. There are good arguments for doing it and there are arguments for not doing it.

Senator INHOFE. The refiners to manufacture the low sulfur diesel, they are going to need to start the process by 2003. If you determine that the technology would not be available for control devices, what happens to the costs that have already been incurred by those refiners starting in 2003?

Mr. PERCIASEPE. You have raised a very important issue that is involved with the technology review. One of the reasons—not the only one—we ultimately did not do it in Tier II, is that when you start doing fuels and vehicles as a system, you sort of have to keep everybody on a schedule of working together. If there is to be a technology review, we would have to figure out how to make sure that the eventuality you raise is avoided.

Senator INHOFE. Why wouldn't it be a good idea to develop the technology first and do the technology review first and then decide if the low sulfur regulations are needed? It seems to me like it's the cart before the horse. We have some uncertainties here and yet people are going to be preparing for these. Again, all these things that take place are going to be passed on to the public, to the consuming public. What is wrong with that idea, developing the technology first before coming to the conclusions?

Mr. PERCIASEPE. We think these technologies are developed enough today that we are highly confident that they will be available in 7 years. We wouldn't propose it if we weren't confident they were. In fact, the Clean Air Act requires that we make a determination that these technologies will be available in the year that the implementation takes place.

Senator INHOFE. But they are not now?

Mr. PERCIASEPE. Will be available. You will hear testimony and probably have it that the people who make this equipment are confident as well.

Senator INHOFE. We have written testimony. We have a little problem in Chicago and I don't have the list of who is not going to be here, but there are three or four who are not, some are replacements here but there is a weather problem apparently.

One of the individuals who will not be here from the Farm Coops who I think will be represented by someone else has written testimony on the second panel wherein he said,

> It is important to understand that even though the proposal is for on-highway diesel, the rule also adversely impacts farm and other off-highway users of diesel fuel. It has been our experience that much of the petroleum storage system, particularly in the rural market served by our cooperatives is generally capable of handling only one grade of diesel, so they don't have the capacity to do the on-road and off-road diesel.

It goes on to say, "For these reasons, we strongly urge that the rule be withdrawn until serious unresolved issues can be addressed." That is a specific issue that he or his representative is going to be addressing.

Have to ask again, why is there such a rush on this rule? We have a lot of agricultural concerns and concerns like this one that may be you have an answer to. How are you going to handle this? In those parts of the country—certainly we have probably an inordinate number of those areas in my State of Oklahoma—what are we going to tell these people?

Mr. PERCIASEPE. We have spent time and we are going to spend more time on that specific issue. When the diesel on-road went from several thousands of parts per million down to 500 ppm in the last decade, exactly what you outlined in that note occurred at these providers and producers. They took their off-road and on-road and everything down to 500 ppm just by way of their product distribution and customer system.

They have raised this issue with us and we have met with them several times. We have discussed some ideas and we are going to continue to work with them before we finalize the rule to try to work out a solution.

Our objective here is not to find a way to reduce the production of diesel fuel that meets these specifications in the United States. If anything, we are going to need more of it. I think you pointed out that in your opening comments. There are going to be more trucks, more buses. We think these engines are fuel efficient and want more of them used. We may see more of them, at least from plans by some of the auto companies, in the light duty fleets.

We want specifications that are going to enable these vehicles to be clean but what we don't want is refineries not making this product. So the demand is going to go up and we want to be able to make sure that demand is met by cleaner fuel.

Senator INHOFE. However, you come to a resolution of the problem like the one we just brought out, don't you think we ought to then have another notice and comment period because they are dealing with new ideas and there is no way for them to anticipate right now what solutions to these problems you will have and how they might want to comment about these problems.

Mr. PERCIASEPE. I guess all I can tell you is we don't anticipate that particular problem at this time.

Senator INHOFE. I can remember when we were talking about the ambient air issues we discussed for a year-and-a-half, most of that I think was before you were in this position, but I was critical of the EPA for not using some of the facilities they have, some of the resources they have and specifically CASAC of some 21 scientists that at that time, as I recall, only two of them agreed with the ambient air proposed rule change. So they are pretty much ignored in the EPA's last draft of its health assessment document for diesel emissions dated November 1999.

CASAC wrote,

> In a February 4, 2000 letter summarizing its concern with this assessment, CASAC cited the need for strengthening the linkages between diesel PM emissions and health hazards.

How has the agency addressed CASAC's concern with this assessment?

Mr. PERCIASEPE. We expect our Office of Research and Development to complete that work by the end of the year with CASAC.

Senator INHOFE. By the end of the year?

Mr. PERCIASEPE. I don't know the exact schedule.

Senator INHOFE. I guess all my questions are getting around to why the rush. I know you are going to have to deal with or respond to CASAC's concerns.

Mr. PERCIASEPE. And we will respond. CASAC raised a bunch of important issues. We are working on those issues, but it is not going to change the underlying—I have just been told that by June we expect to get a report to CASAC in June so I guess it is sooner than I thought. Obviously, they are going to have to review and there will be some process.

We understand what their issues are and based on everything I know, I believe they will be addressed in the followup report that the Office of Research and Development is doing.

I want to point out there are other organizations out there that are looking at this issue. It is not just EPA.

Senator INHOFE. Right now you are talking about coming out in December, correct, when you want to get all this done?

Mr. PERCIASEPE. Yes, that is our current schedule.

Senator INHOFE. As it happens, there is going to be an election in November and it might very well be that there will be a change in administration in January. It would seem to me whoever is the next administration, they might have a different view on this and I can't see anything wrong with if there is a month delay, it won't bother me a bit.

Mr. PERCIASEPE. I will only say I appreciate that thought but I plan to work full bore until January 20 whatever it is.

Senator INHOFE. There are other questions that will be asked for the record. I think the committee members are waiting for this vote to take place before they come here from the Capitol.

We will go ahead and dismiss the first panel. I appreciate very much the time you have given us here. I have enjoyed working with you.

Mr. PERCIASEPE. Thank you very much for that.

Let me just say to my colleagues in industry here, we plan to work pretty darned hard with them to try to find a way to do this. I know we have some bridges to cross.

Senator INHOFE. My concern is it is a tough one to deal with and in my own mind, I know there are political considerations, not with you, but with others who are in a bigger hurry than I am to get some of these things done. So we will probably get some reaction from the next panel.

If the next panel would come to the table. Panel II includes: Mr. J. Louis Frank, president, Marathon Ashland Petroleum; Mr. Jerry Thompson, senior vice-president, Development & Technological Excellence, CITGO Petroleum; Mr. Robert I. Looney, Government Affairs, Cenex Harvest States Cooperative on behalf of the National Council of Farmers Cooperatives; Mr. David Addington, senior vice-president and general counsel, American Trucking Association; Mr. Bruce Bertelsen, executive director, Manufacturers of Emission Controls Association; and Mr. James A. Haslam III, chief executive officer, Pilot Oil Corporation. The Engine Manufacturers could not be here so we have six instead of seven who are here today.

Mr. Frank, if you would like to go ahead and give your testimony. Your entire testimony will be entered into the record as all of you know. Try to confine your remarks to 5 minutes and it would make it much easier.

STATEMENT OF J. LOUIS FRANK, PRESIDENT, MARATHON ASHLAND PETROLEUM, LLC, ON BEHALF OF THE AMERICAN PETROLEUM INSTITUTE

Mr. FRANK. I am J. Louis Frank, president of Marathon Ashland Petroleum. I am here today to testify on behalf of the American Petroleum Institute.

The energy industry asks that you carefully consider our views on the EPA's recently proposed diesel sulfur regulations. First, understand that we support reducing sulfur content in diesel fuel. This is an area where fuel producers can make a positive contribution.

U.S. air quality has benefited because of and in proportion to the extent that we have formulated fuels to cut tailpipe and exhaust stack emissions. EPA's statistics prove that nearly two-thirds of America's air quality improvement is due to clean fuels and clean engine technology. Moreover, the improvement has been steady and is ongoing and I am proud of that result.

Please note there was no magic involved, no instant alchemy. It was a painstaking process of finding what worked technically, economically and commercially. We do this for a living. We cannot afford to be wrong. Costs and benefits have to balance and that goes to the heart of the industry's contention that pushing beyond a 90-percent reduction in diesel fuel puts wishful thinking ahead of market reality.

EPA's case is based on the use of fuel technology that still remains unproven. This is technology which EPA admits has not advanced from the chalkboard to the field trial stage. In preliminary tests, the EPA recommended technology that has failed to hit the target emission levels. Regardless of fuel sulfur content, industry knows how to hit the 15 ppm standard but we also know that volumes are cost constrained. Many refineries will choose not to produce this product.

Any trucker or fleet operator can tell you what that will do to their business. Our estimate is that EPA's proposal would add about $2,500 to the cost of a trucker's annual operations just for the hardware and investment at the refinery alone. Fuel availability could shrink by as much as 20 percent.

Real world constraints will also affect our ability to maintain the 15 ppm standard through thousands of miles of pipeline shipment. Terminal storage and station disposition, 15 ppm is equivalent to less than a tablespoon of water in an olympic-size swimming pool.

Contamination at the molecular level could endanger this fragile standard. The reality is that refiners would actually have to reduce levels below 15 ppm to have a reasonable assurance that product stayed on spec throughout the entire logistical system to the truckers fuel tank.

EPA has raised the possibility of phasing in its sulfur requirements to mitigate their impact. This would necessitate purchasing additional tanks, piping and pumps to ensure separation throughout the entire distribution system and that the standard could be maintained.

To accommodate the sale of these two varieties of diesel fuel rather than one, the bottom line is less efficiency and more costs. The question is, can it be justified.

I am saying to you on behalf of America's energy industry, that we are prepared and have supported a 90-percent reduction in diesel fuel sulfur level knowing full well what that entails in terms of production costs, quality maintenance and capital investment. We support this reduction and we understand its potential health benefit.

This is not a poker game. We are not arguing over table stakes. Anyone can demand too much, too soon. Setting an appropriate regulatory standard however, demands wisdom, courage, and care.

Thank you very much for your consideration and letting me testify here today.

Senator INHOFE. Thank you.

Mr. Thompson, nice to have you here from Tulsa.

STATEMENT OF JERRY THOMPSON, SENIOR VICE PRESIDENT, DEVELOPMENT & TECHNOLOGICAL EXCELLENCE, CITGO PETROLEUM

Mr. THOMPSON. Thank you.

My name is Jerry Thompson, senior vice president CITGO Petroleum Corporation, a major refiner and marketer of petroleum products in the United States. I am also chairman of the National Petrochemical Refiners Association, a trade association of virtually all large and small refiners and petrochemical producers.

NPRA is deeply concerned about the impact of EPA's new diesel sulfur proposals. We do not believe it is possible to consistently maintain needed supplies of highway diesel with the 15 ppm sulfur cap. Although some refiners may be able to produce some amount of this diesel, many would be forced by its high cost to limit or forego participation in the highway diesel market. This would reduce supplies well below those available under a more realistic sulfur cap.

In addition, it would be extremely difficult to deliver highway diesel with a 15 ppm sulfur cap to consumers. This highway diesel must share a distribution system with other products that have significantly higher sulfur levels.

At the 15 ppm sulfur cap, there will be a significant amount of highway diesel that will have to be downgraded to a higher sulfur product due to product contamination at the interfaces. With the enforcement at retail as opposed to the refinery gate, refiners will be forced to target their production to 7 to 9 ppm sulfur to account for test tolerances and reproducibility.

In short, NPRA views EPA's proposal as a blueprint for fuel shortages and severe economic impacts. It threatens to leave American consumers a legacy of scarce and unnecessarily costly energy supplies.

Throughout protracted discussions with EPA, the refining industry suggested a more reasonable way to reduce diesel emissions. We favor lowering the current 500 ppm diesel sulfur cap to 50 ppm, a 90-percent reduction. This would enable diesel engines to meet the particulate matter standards sought by EPA and also achieve significant NO_X reductions.

Our plan is still expensive. We estimate it will cost the industry roughly $4 billion to implement, but unlike EPA's extreme and much more costly proposal, this level of sulfur reduction is sustainable. Most refiners would choose to make the more affordable investments needed to make a 50 ppm diesel.

EPA's program offers sharp contrast. Some refiners would invest in the expensive new equipment necessary to produce 15 ppm diesel. Many others would be unable to make these large investments necessary to produce this product. They would find other uses or markets for their current diesel output which will significantly reduce the supply of highway diesel fuel available and will create price volatility.

Up to 30 percent of the current supply of highway diesel could be lost until additional investments are made and desulfurization capacity is built. This could take as long as 4 years. Some refiners could likely go out of business.

EPA's diesel proposal is estimated to cost somewhere between $8 and $10 billion. This amount comes on top of the $8 million in cost the industry is already incurring to implement EPA's gasoline sulfur program in the very same timeframe.

A study to be released next week by the National Petroleum Council concludes the industry will not have the capability to make these investments within this timeframe and that additional time is required for the low sulfur diesel investments.

The industry's warnings about this rule are well founded. We, at CITGO, have some relevant real world experience. In the EPA's proposed rule, our facilities at the Lyondell CITGO Refinery are referenced as having a diesel desulfurization technology capable of producing the 15 ppm diesel fuel. We find based on our actual operating experience with the referenced technology, the capital and operating costs are much higher at the 15 ppm sulfur cap than has been implied in the proposal and the ability of this technology to consistently produce below 15 ppm diesel is problematical.

The feedstocks of this revamped facility are 30-percent straight run stocks from crude distillation and 70-percent crack stocks from conversion units. These crack stocks are significantly more difficult to treat to the 15 ppm level. Our operating data shows that to consistently desulfurize to 15 ppm or below, a significant portion of crack material must be removed from the feed thereby reducing our diesel production by this amount.

We spent $86 million to revamp this existing 50,000-barrel-a-day unit. This is significantly higher than the $30-million revamp cost that is in the EPA proposal for a typical refinery processing light cycle oil. The unit meets the 15 ppm sulfur cap at initial conditions at start of run, however, at the proposed 15 ppm sulfur cap with 70-percent crack material, the cycle life of the catalyst is greatly reduced from current operation of 24 months to 8 months.

This significantly raises the operating cost by more frequent catalyst replacement and more frequent shutdown. It also results in a loss of diesel production. The more frequent catalyst change-outs to meet 15 ppm sulfur cap raises the cost of diesel production by as much as 7 cents per gallon on our existing unit. So you see, that which looks simple in theory doesn't always work in practice.

EPA argues that its extreme proposal is needed to enable heavy duty engines to meet the stringent NO_X standards in the 2007 timeframe. Of course that NO_X standard was arbitrarily selected by EPA. It is considerably lower than NO_X standards for the same period in Europe or Japan and is probably unrealistic. Still EPA's $10 billion plan for 15 ppm diesel is largely based upon this arbitrary and unobtainable target.

NPRA is strongly urging EPA and this subcommittee to reject that approach and favor the more practical and sustainable 50 ppm diesel sulfur cap which the refining industry advocates.

Thank you for the opportunity to appear and I look forward to answering your questions.

Senator INHOFE. Thank you, Mr. Thompson.

Mr. Looney.

STATEMENT OF ROBERT J. LOONEY, GOVERNMENT AFFAIRS, CENEX HARVEST STATES COOPERATIVE, ON BEHALF OF THE NATIONAL COUNCIL OF FARMER COOPERATIVES

Mr. LOONEY. Thank you.

I am going to be speaking on behalf of Mr. Eischens who was unable to make it due to cancellation of his flights.

Mr. Eischens is a fourth generation farmer from Mineota, MN, and he was going to be here today to speak on behalf of the National Council of Farmer Cooperatives but more importantly, he was going to speak as an elected director of Cenex Harvest States Cooperatives which is a regional cooperative in about 18 States. He is also a member of a local cooperative and also a farmer. I would like to read his statement.

Cenex Harvest States Cooperative is one of only four cooperatives in petroleum refining. We have a small refinery in Montana and majority ownership of a refinery in Kansas. Cooperatives are uniquely accountable in the petroleum business in that the customer is also the owner. Farmers have invested heavily in cooperative petroleum operations to help assure reliable and affordable

fuel supplies. Cooperatives supply about 40 percent of on-farm fuel use and are the only remaining suppliers in many rural communities.

Curt is also a local co-op member, one of our thousand co-ops that own petroleum tankage that will have to bear the cost of any new tankage requirements. Curt is also a family farmer, one of 325,000 member owners in Cenex Harvest States Cooperatives who could bear the bulk of the costs imposed on our regional and local co-operatives and personal costs if increased tankage is required on the farm.

One might wonder why a farmer was to be here today to express concerns with EPA's proposed rule for on-road diesel. Many, including key people in the Federal agencies, believed until recently that agriculture would not be affected by this on-road standard. The fact of the matter is, this on-road proposal adversely impacts agriculture in a number of ways.

First, we are concerned that an ultra-low standard for sulfur and diesel fuel will increase the threat of supply disruptions in rural America. Agriculture's fuel supply cannot be placed at risk.

Second, most of the off-highway diesel fuel in rural America will be forced to the new highway standard because much of the diesel storage system, particularly in rural markets served by our co-operatives, is capable of adequately handling only one sulfur level per grade of diesel fuel which will be determined by the new standard for highway diesel.

Any mandate or option for two on-highway low sulfur diesel fuels could impose major and unacceptable costs on local co-operatives or force local co-operatives to choose which customers to lose.

Third, these distribution limitations mean that our farmer-owned refineries will be forced to go to the ultra-low on-road standard even though most of our market is off-road for farm uses.

Fourth, diesel fuel costs for farmers in rural America will increase 10 cents or more per gallon with higher price spikes in the event of tight supplies or disruptions.

Fifth, co-operative investments involve farmers' money. We don't know how we will be able to afford it especially during difficult times like farmers are now experiencing. Any costs incurred by co-ops, especially regulatory requirements, are borne by the farmers as a heavy penalty. How? There are three.

First, it is extremely difficult for us to generate the necessary capital for large expenditures like this rule would require. Co-ops are prohibited from issuing stock in the equity markets and during these difficult economic times, it is particularly difficult for us to borrow these funds.

Second, farmers get no return on this investment and it consumes scarce funds desperately needed for investment in projects to improve farm income.

Third, in the end, farmers bear the burden both through higher diesel fuel costs as customers and reduced patronage from their co-ops as owners.

Agriculture's concern is widespread and growing as demonstrated by the Ag Coalition letter which is in the packet with the written testimony containing nearly 30 organizations representing many facets of agriculture that has been submitted for the record.

Farmer co-operative representatives have been working with EPA quite extensively and we appreciate the agency's recognition of the unique structure and challenges for farmer-owned co-operative refiners as well as possible compliance flexibility options.

However, we believe that the proposal goes too far, too fast, and has failed to consider the major real world impacts on agriculture and rural America. This is why the National Council of Farmer Cooperatives recommends that the rule be withdrawn and reconsidered.

We urge that Congress direct EPA and USDA to study and address the potential impacts of EPA's proposal on the availability and cost of diesel fuel for farmers in rural America as well as the effects on the performance of agricultural equipment. In 1985, Congress took similar action on unleaded gasoline. I have a copy of the section of the law that was passed by Congress in 1985, and would hope that Congress would do something similar in the next legislation for this rule.

In closing, the National Council of Farmer Cooperatives recommends that any final rule include the following basic elements. We would like a sulfur cap of 50 ppm; no phase-in or requirement to low-sulfur diesel fuels and maximum compliance flexibility for co-operative refiners.

Just as farmers need and want cleaner air, we also require reliable and affordable fuel supplies. On behalf of farmer co-operatives, Curt Eischens' family farm in Minnesota and other farm families across rural America, I urge Congress to help ensure that EPA doesn't move too far too fast.

Senator INHOFE. Thank you, Mr. Looney.

You mentioned some 30 farm organizations and you made a recommendation. Are you speaking for any other than yours or are you speaking for all these organizations?

Mr. LOONEY. The recommendations reference the study on agricultural machinery which is from the National Council of Farmer Cooperatives and its members. It is not necessarily from the list of 30 organizations.

Senator INHOFE. Thank you.

Mr. Addington.

STATEMENT OF DAVID S. ADDINGTON, SENIOR VICE-PRESIDENT AND GENERAL COUNSEL, AMERICAN TRUCKING ASSOCIATIONS, INC.

Mr. ADDINGTON. Thank you.

We appreciate the opportunity to appear before the subcommittee today to express our serious concerns with the new regulations on diesel engines and fuel proposed by the EPA on June 2, 2000. The membership of ATA, like other Americans, supports the objective of clean air.

We believe the Government should base its efforts to achieve clean air on sound science, public safety and the needs of the American economy. I will describe the trucking industry and some key problems the EPA rule poses for our industry and for the American economy.

The American Trucking Associations is the national trade association for the trucking industry with more than 2,500 motor car-

rier companies who are our members and who operate in every State in the Union.

Trucking is vital to the Nation's economy. Trucks move the majority of the freight that moves in America. Seventy percent of America's communities depend exclusively on trucks to receive freight. EPA regulations affecting trucking operations therefore have a direct impact on a huge segment of the American economy.

Although some trucking companies are multibillion dollar companies whose names you know, most of the trucking industry is small business. According to the Department of Transportation, almost 50 percent of motor carriers have only one truck and a full 95 percent of motor carriers, almost 395,000 of them, have 20 or fewer trucks.

The EPA proposal has three major problems. It discriminates against on-road sources of diesel, that is vehicles on highways, in favor of off-road sources. It bets our future on unproven technologies. It forces substantial costs on the trucking industry and the economy as a whole.

Regarding discrimination, the off-road sources of diesel emissions, such as locomotives, boats, utilities, and generators produce, emit more of the troublesome emissions than on-road sources. Yet, EPA has singled out with this rule the diesel fuel truck for tighter restrictions.

EPA's decision to single out on-road diesel emission sources is unjustified. Indeed, EPA did not even try to justify it. EPA simply said they "plan to initiate action in the future to formulate thoughtful proposals covering both non-road diesel fuel and engines." The EPA should initiate a thoughtful proposal now and cover non-road diesel emission sources.

The trucking industry has contributed substantially to air quality improvements in the United States in the past decade. It is time for others to do as much as we have already done.

On technology, EPA wants trucks to employ after-treatment methods to reduce emissions that employ technology that is not field tested and proven. EPA is placing a risky bet that 5 years from now the technology will be ready to go. EPA should not impose radical changes in diesel engine and diesel fuel standards unless and until it knows the necessary technology works.

On costs, the EPA's own estimates say the proposed rule will add $2,768 to the cost of a new heavy duty truck and over the life cycle of that truck, another $3,362, for a total of more than $6,000 per truck. EPA also says its rule will add about 4 cents to the cost of a gallon of highway diesel fuel. Even these EPA estimates of the increased truck costs and increased fuel costs would be difficult for many in the trucking industry to bear. The refining industry tells us that EPA actually has grossly under-estimated the increase in the price of diesel fuel that will result from this rule.

Finally, the refining and distribution industries have told us that it will be extremely difficult to maintain the purity and distribution of the new on-road diesel fuel and that they cannot guarantee uniform, nationwide availability of the product. If the new fuel is not available everywhere like the old fuel, it will be a disaster for the trucking industry and the economy.

The subcommittee asked me to address the EPA rules on diesel engines and fuels, and I am pleased we had that opportunity. But I would be remiss if I did not draw to the subcommittee's attention that this rule is only one front of the current three-front regulatory war that this Administration is waging on the trucking industry. Like the diesel rule, the rules on the other two fronts, the Department of Transportation's proposed rule on truck driver hours of service and OSHA's proposed rule on ergonomics, also are based on flawed science, flawed economics and unfair government favoritism toward our industry's competitors.

On all three fronts, hours of service, ergonomics and diesel, the trucking industry faces extraordinary costs as a result of government mandates. I would point out they are the functional equivalent of taxes and nobody in Congress has voted on them; they are being imposed through the three bureaucracies.

Because the economy has been so good to so many Americans in the past decade, and we are all thankful for that, many people overlook the fact that margins in the trucking industry have been extremely low. Trucking companies that already have a tough time meeting the payroll and making any money simply cannot bear the cost of new regulations that the Administration wants to impose, in its closing days, on our industry.

We appreciate the opportunity to appear before you and would be pleased to answer questions.

Senator INHOFE. Thank you.

Mr. Bertelsen, you are kind of alone here and if this goes through, you may be the only beneficiary at this table. Since Mr. Keller, the engine manufacturer's witness could not come, feel free to take his time also if you need additional time.

STATEMENT OF BRUCE BERTELSEN, EXECUTIVE DIRECTOR, MANUFACTURERS OF EMISSION CONTROLS ASSOCIATION

Mr. BERTELSEN. Thank you, Mr. Chairman.

I think if the rule goes through, the real beneficiaries are going to be the American public.

My name is Bruce Bertelsen and I am the executive director of the Manufacturers of Emission Controls Association. We are very pleased to have the opportunity to participate in today's hearings on the proposed sulfur diesel requirement and how it relates to the important issue of reducing emissions from diesel powered engines and vehicles.

We believe an important opportunity exists to significantly further reduce emissions from highway, heavy duty diesel engines by using an engineered systems approach which incorporates and combines advanced engine designs, advanced emission control technology and very low sulfur diesel fuel.

EPA's recently proposed regulatory initiative recognizes the importance of promoting the systems type approach and if it is finalized, we believe it will bring about the age of the truly clean diesel. That is my reference with regard to the benefit to the public because I think that is the objective that we all would like to achieve. We may disagree on what is necessary to be done but I think we all agree sitting at this table that it is important to achieve the goal of the truly clean diesel engine.

I think achieving that goal fairly presents significant challenges to the engine manufacturers, to the emission control manufacturers and certainly to the oil industry. We believe if we work together these challenges can and will be met.

MECA is a nonprofit association made up of the world's leading manufacturers of motor vehicle emission controls. Our membership has over 30 years of experience and a proven track record in developing and commercializing exhaust control technologies for motor vehicles.

Our comments today are based on work being performed by our members, their extensive experience in the field of motor vehicle catalysis and a growing body of technical data that is beginning to emerge. We believe the emission standards of a .2 NO_X and 0.01 particulate matter or PM standard proposed for highway diesel powered, heavy duty engines can be achieved in a cost-effective manner within the lead time provided, if fuel with sulfur capped at 15 ppm is available.

Sulfur in fuel adversely affects the performance of all catalyst-based emission control technologies. The impacts range from reducing the effectiveness of these controls to rendering certain catalyst-based controls ineffective.

While we continue to recommend that EPA establish a sulfur cap of 5 ppm, our members believe that with a sulfur cap of 15 ppm, emission control strategies can be developed to meet the proposed emission limits. Specifically, with a 15 ppm cap, our members are extremely confident that all catalyst-based filter technologies can be designed to help meet the 0.01 PM standard and that NO_X adsorbor technology will be optimized to help meet the 0.2 NO_X standard.

To give a little background on the status of the technology because this is something that has been raised by several of the speakers and discussed, with regard to diesel particulate filters, they are commercially available today. The only remaining engineering effort is to optimize the filter system for the specific engine to which it will be applied. Worldwide, there are over 20,000 PM filters that have been equipped on diesel engines.

The difficulty with sulfur is that it reduces the PM control efficiency of the filter because sulfur in the fuel is converted to SO_3 over the catalyst and becomes a sulfate which is measured as a particulate. In addition to the increase in sulfate, the level of sulfur in diesel fuel adversely affects the temperature at which regeneration of the filter occurs. Regeneration is basically when the particulate which has been trapped in the filter is combusted or destroyed.

Failure to achieve this proper regeneration can adversely affect the performance and durability of the filter system. Therefore, the impact of sulfur in raising the regeneration temperature is a significant issue.

Operating experience with filter technology in Europe with less than a 10-ppm sulfur diesel fuel demonstrates that proper filter regeneration will occur even when these vehicles are operated in areas such as Sweden where there are low ambient temperatures. Some of these vehicles have achieved hundreds of thousands of miles equipped with filters and are getting very, very effective PM control.

With regard to NO_X adsorbor technology, the development and optimization work with NO_X adsorbor technology is progressing at a rapid rate and our members believe that with the availability of very low sulfur diesel fuel, this technology will be commercialized in the 2007 timeframe for diesel engines. While sulfur levels above 5 ppm present additional design challenges for NO_X adsorbor technology, companies developing this technology believe that with the considerable R&D efforts already underway, NO_X adsorbor technology will be optimized to operate with a cap of no higher than 15 ppm sulfur.

Another NO_X control technology is selective catalytic reduction for NO_X control. This is another technology that is being developed and we expect that it will be commercialized in the near future.

SCR technology that uses an oxidation catalyst to facilitate the NO_X reduction component of the technology to achieve very, very high NO_X control levels requires the same low sulfur levels as the NO_X adsorbor. There are other SCR technology designs that are less sensitive to sulfur but even these technologies with the availability of very low sulfur fuel, are able to optimize these technologies to achieve the highest NO_X reductions and allows for full optimization of the engine and exhaust control technology.

In conclusion, again, we believe that working together in a true partnership, the objective of the truly clean diesel can be achieved. Our industry is prepared to make the necessary investments to help ensure that the desired emission reductions are achieved.

Thank you and I would be happy to answer any questions.

Senator INHOFE. Thank you.

Mr. Haslam.

STATEMENT OF JAMES A. HASLAM, CHIEF EXECUTIVE OFFICER, PILOT OIL CORPORATION

Mr. HASLAM. Thank you.

I am CEO of Pilot Corporation, a family owned, private company headquartered in Knoxville, TN. Pilot does not make diesel fuel, we strictly sell diesel fuel. Our company owns and operates 180 travel centers and convenience stores in 37 States stretching from Connecticut to California, from Wisconsin, south to Florida and Texas.

We sold, last year, approximately 10 percent of all diesel fuel, over the road diesel fuel in the United States. Pilot is the largest independent retailer of diesel fuel in the United States.

I appear before this subcommittee today on behalf of the Society of Independent Gasoline Marketers of America. SIGMA is an association of 260 motor fuel marketers operating in all 50 States. Collectively, SIGMA members sold over 13 billion gallons of on-road diesel fuel last year.

My personal experience with Pilot and my representation of all SIGMA members at this hearing today combine to make me well qualified to speak about the EPA's diesel sulfur proposal, not just from the diesel marketers perspective but from the perspective of diesel fuel consumers as well. From this point of view, diesel fuel marketers and our customers, EPA's proposal will have dire consequences on not only our business but our customers and we believe on our national economy.

SIGMA strongly opposes the proposal for one fundamental reason, it will reduce, perhaps substantially, the supplies of on-road diesel fuel. Diverse and plentiful sources of supply are the life blood of independent petroleum marketers like Pilot. Without adequate supplies of diesel fuel, independent marketers, the most competitive segment of the motor fuels marketing industry, will cease to exist as a force in diesel fuel retailing.

EPA's diesel sulfur proposal will result in a substantial decrease in the overall supplies of on-road diesel fuel in this country. As EPA admits in its proposal, some refiners will not be able to make the capital investments necessary to produce ultra-low sulfur diesel fuel resulting in reduced diesel supplies. EPA also admits that desulfurization technology currently does not exist to remove sufficient sulfur from certain diesel fuel blend stocks further reducing supply.

EPA further admits that our Nation's diesel fuel distribution system will be forced to downgrade an unspecified portion of our Nation's diesel fuel production because it will become contaminated with higher sulfur products during distribution, again reducing overall supply.

EPA highlights the fact that under the proposal, domestic diesel fuel will have a substantially lower sulfur level than diesel fuel produced in most other industrialized countries which will prevent foreign supplies of diesel fuel from alleviating any shortage in domestic production.

Independent marketers of diesel fuel will not be the only ones to suffer under EPA's proposal. Consumers of diesel fuel, including our Nation's trucking and agricultural industries, will pay for EPA's program at the pump. EPA predicts in its proposal that diesel sulfur reductions will cost approximately 4.5 cents per gallon. That number is woefully low.

As we witnessed last winter and this spring in the northeast and are now witnessing currently in the Midwest, even small supply shortages of motor fuels can cause dramatic increases in retail prices. If overall diesel fuel supplies are reduced by 10 percent as a result of EPA's proposal which I believe is not an unreasonable number and which you have heard some predict today it will reduce it by 20 percent, then the $2 per gallon diesel fuel prices we saw in the northeast last winter will become the norm if not a bargain in the eyes of consumers.

SIGMA would bring this subcommittee's attention to an issue contained in the preamble to EPA's proposal that is not currently a formal part of its draft regulations. In the preamble, EPA requests comments on adopting a regulatory scheme that would permit two on-road diesel fuels to exist for a short period of time. As the Nation's largest independent retailer of on-road diesel fuel, I must tell you this proposal would be disastrous for our industry and the Nation's motor fuel distribution system. It is simply not practical.

At the vast majority of our companies' 180 locations, we have very limited storage for our diesel fuel. At most sites, our tanks hold less than 24 hours of supply. In many instances, we would not have room at our sites to install additional tankage even if we could get the permits to do so.

As a result, I urge the members of this subcommittee to communicate to EPA your opposition to the agency's dual fuel approach. SIGMA would support a diesel desulfurization program that accomplishes three things.

No. 1, takes effect in 2010 or later to permit adequate time for proposed, experimental emissions control and diesel desulfurization technologies to mature and develop and gives refiners additional time to install these new technologies.

No. 2, sets a diesel cap 50 ppm rather than 15 ppm that EPA's proposal would mandate.

No. 3, establishes a uniform transition to the new lower sulfur diesel fuel without a dual fuel approach.

An EPA regulation that adheres to these three principles would have only a minimal impact on overall diesel fuel supplies while reducing diesel sulfur levels by 90 percent and achieving substantial reductions in emissions from heavy duty diesel engines. In addition, the longer implementation timeframe would permit the manufacturers of emissions control devices to develop their technology to a level at which a 50 ppm sulfur level would not have a negative impact on emissions.

I appreciate the opportunity to appear before you.

Senator INHOFE. Thank you.

I have a number of things I would like to go through, starting with Mr. Frank. First of all, you heard Mr. Perciasepe's statement and responses, do you believe there could be diesel supply problems if this rule went into effect in the anticipated time schedule of the EPA because of refineries closing or choosing to export or even moving? I am more concerned about the supply problem than I am the amount of money that can be calculated and expressed in an increased cost of diesel.

Mr. Frank, in terms of the supply problem, do you think a supply problem would exist if this rule went into effect?

Mr. FRANK. Yes, I do. As I testified, I think the transportation fuel segment itself could see a 20-percent reduction in supply and could be larger and diesel fuel in general, by those elected not to manufacture the low-sulfur diesel, could be exported. That situation could exist, that there would be overcapacity in the high-sulfur diesel market.

Mr. THOMPSON. Yes, I definitely do. Currently, 30 percent of the Nation's diesel pool is comprised of cracked material from the refining process. These cracked stocks are extremely difficult to desulfurize to these very low levels of 15 ppm. That is why I testified that up to 30 percent of the Nation's current diesel supply is at risk of going to other markets because of this rule.

Mr. LOONEY. Yes, Mr. Chairman. Supply difficulties would occur in rural America and to many of the farm operations. Many of those areas are supplied by small refiners who will not only have to make those critical decisions of when to change but if they are going to change. That has an effect not only on the on-road but the off-road supplies. So there would be some supply problems probably in both categories.

Mr. ADDINGTON. Yes, as I testified, the refining industry has told us that will occur. That is why I emphasized that 70 percent of America's communities depend exclusively on truck for freight. You

need to have that diesel fuel everywhere you need it, not just in the large cities that get better refinery service.

Mr. BERTELSEN. That is really outside our area of expertise but I think obviously any rule such as this needs to take into consideration possible impacts on fuel supplies.

Mr. HASLAM. Yes, I think we have seen the supply system in our country is extremely fragile. Even the smallest of interruptions like we have had this spring in gasoline in the Midwest causes tremendous price spikes. I think we would be much more subjected to those under EPA's current proposals than we are now.

Senator INHOFE. Two or three of you referred to what you thought specifically would be the effect in terms of a price at the pump. I suspect in calculating that you are somehow prorating the cost of upgrading and buying new equipment and all that, as opposed to the supply and demand. I think the supply and demand effect on the price would be far greater than just upgrading equipment.

Mr. Frank, we talked about this a year ago when you testified.

Mr. FRANK. Yes, sir.

Senator INHOFE. I would like to go down the row and again particularly for those who gave the 4 cent figure, was that just in equipment upgrades or was that taking into consideration it would have to be a pretty in-depth study to look at the supply and demand and what effect that would have on the price?

Mr. Frank.

Mr. FRANK. It is a bit more complicated than a yes or no answer.

Senator INHOFE. I know that and I don't want people to feel uneasy because I certainly couldn't answer it. There is no way to anticipate what the supply and demand effect of this rule would be so you would have to make a judgment.

Mr. FRANK. I think the effect of cost would be in the 4 to 11 cents a gallon range for the hardware at the refinery itself, depending on whether facilities can be modified or new facilities have to be built and I think that does not include the infrastructure adjustment if additional pipelines have to be made to keep the diesel fuel separated and additional tankage has to be installed at both the terminals in the service station level. It could be two and a half to three times that much.

The real question I think you're asking is that impact on the supply situation, the cost will not be the determining factor at least for the first few years of what it cost to do it. It will be that there will be a shortage in the market and there will be a price response as the bids go up for supply to be able to keep truck fleets running or SUVs supplied or whatever the situation is because a 20-percent shortfall in the diesel fuel market will be much the same situation that we are seeing in the Midwest today. It is not the cost that is the factor, it is that there is a shortage of supply.

Senator INHOFE. I think that is what the Governor of Illinois was saying in his press conference yesterday?

Mr. FRANK. Yes, sir.

Senator INHOFE. Mr. Thompson.

Mr. THOMPSON. You are correct, the figures we quote are the cost to manufacture figures. In an ideal world where supply equals demand, then that cost will translate into a price at the pump but

in a situation where you do have a supply shortage, now supply is less than demand, prices have to increase to bring those two back into equilibrium. In a shortage situation, the price at the pump does not bear a direct relation to the cost to the manufacturer but it does have to increase to equalize the balance between supply and demand.

So when we say the cost will be $4 billion or 6 to 11 cents per gallon with the industry's proposal of 50 ppm cap, that assumes a steady state situation where supply and demand are in balance. If we do have disruptions, then price spikes will necessarily follow.

Because of this concern, as much as 30 percent of the pool could go to other markets, prices will increase and present an opportunity for other people to invest to take advantage of that opportunity. Because of the lead time required, we are talking as much as 4 years for the investment and construction of the desulfurization equipment. So we are not looking at a 2 to 3 month phenomenon here, we could be looking at a shortage of up to 30 percent for as long as 4 years.

Mr. LOONEY. I mentioned 10 cents and that is an estimate of refinery costs. One issue I would like to point out to farmers is the availability and very limited periods of time during the year, the seasonal aspect of the production of agricultural supplies, early spring and harvesting, needs availability of fuel and the right type of fuel for farmers and the machinery. It is very, very important. We have not been able to make any cost estimates on that. That is a very critical thing for agriculture. We must have it then.

Mr. ADDINGTON. I cited three figures with regard to cost, all of which came directly from EPA's own estimates: the additional cost of buying a truck, the additional cost in the life cycle operation of the truck and the price of the diesel fuel.

Senator INHOFE. You are prorating capital expenses.

Mr. ADDINGTON. They broke them out separately. In any event, we consider the EPA's estimates underestimates which we only use because that is what they produce. The oil industry has told us the estimates on fuel are way too low on EPA's part.

Senator INHOFE. Mr. Bertelsen.

Mr. BERTELSEN. I am not qualified to comment on that.

Senator INHOFE. Two of you have said you would support the 50 ppm sulfur level if it also met a 75-percent reduction. Do all of you agree with that?

Mr. FRANK. Yes, sir.

Mr. THOMPSON. Yes.

Mr. ADDINGTON. We would be very interested in that if, and it is an important if, the Federal Government set a standard that preempted the 50 States so that there was a single national diesel fuel standard rather than having a situation, as we do now, where California has a different standard and now parts of Arizona may adopt them and parts of Texas have adopted different standards.

Mr. FRANK. Between the industry's proposal of 50 ppm and 15 ppm that doesn't sound like a lot but the costs go up exponentially. There is no basis for the 15 ppm level. Mr. Bertelsen testified that he thinks the NO_X adsorbors could develop the technology to be effective at 15 ppm but the truth today is that they really have to

have 0 ppm sulfur to be effective. The technology doesn't exist today for 15 ppm performance.

What the EPA is asking the refining industry to do as well as the rest of the downstream industry is to invest billions of dollars based on the belief that the technology can be developed. We got in trouble before on the belief that something can be done. I know the oil industry takes a lot of heat because people criticize saying you told us it couldn't be done before but yet you did it. For instance, removing lead from gasoline, I think the industry has always taken a conservative approach to trying to guard the fuel supply for the American consumer so that they can be supplied fuel consistent with cost-benefit analysis.

The place where that wasn't true was in the Clean Air Act where we made a mistake with the oxygenates requirements of putting MTBE in gasoline. That was done as a technology driver. It turns out that has created a lot of problems.

Because things weren't tested to see that they could operate effectively before the regulations were implemented that required their use, this could turn out to be the same kind of disaster.

Senator INHOFE. Prior to coming to the House, I spent over 30 years in the real world going through exactly what the people you represent are going through today. That is one reason I ran for this office.

I have one question. Mr. Haslam, you talked about having a dual fuel standard because of the distribution shortage problems. Expand on that a little bit and tell us if there are any particular regions of the country that would impose greater hardships on.

Mr. HASLAM. No, sir, it is no regions, it is site specific. For example, our typical travel center have two 20,000 gallon tanks, a total of 40,000 gallons of storage. The reality is that we turn our inventory in the diesel business which is such a high volume, low margin business that from a practical standpoint, we would have to spend substantial amounts of capital for only a minimal time period to be able to sell two different kinds of diesel. It is totally unpractical today.

Senator INHOFE. Mr. Looney, from a co-op's perspective, were you satisfied with Mr. Perciasepe's answer to my question concerning the problems that would be created by dual fuel standards?

Mr. LOONEY. I can speak personally to the fact that EPA has at least four levels been very active pursuing all aspects of the impact this rule will have on agriculture. We have talked to them on four different levels but that has been very recently in the last couple of weeks. I know they are very energized about making sure they understand the whole process. I think we are just beginning to raise the right questions and provide the right answers. I would say they have started the process to address those issues.

Mr. FRANK. From the refiner, transportation industry's perspective, the logistical system today within the confines of the way our system of pipelines and terminals are structured, we know how to transport and handle those fuels and keep the ultra low-sulfur level from getting contaminated in the pipeline or in the tankage. I think that is going to require substantial investment in pipelines and tanks to keep a clean fuel separated from higher sulfur fuels. For instance in the same pipeline, we ship various kinds of fuels

all the time. Some have high sulfur, some have low sulfur. This would be an ultra low sulfur. The molecular transfer of sulfur just from what hangs onto the wall of the pipe would contaminate the low-sulfur diesel fuel.

In the transmix, the interface mixing between the two fuels and it would have to be rejected for ultra low-sulfur fuel, would have to go back to the refinery or else be downgraded to high-sulfur diesel. That is part of the shrinkage that would occur.

Senator INHOFE. I am going to conclude this. I have some thoughts that concern me. One is, and I don't want this to be misunderstood, but we do have an election coming up and we're going to have a different administration. To me it is very disturbing when all of a sudden we have this December deadline and everything is going to have to be in place.

The only encouraging thing I get out of that from the EPA is they must be concerned it is going to be a more dramatic change in the White House than they want. For that reason, I think it is all going to happen and regardless of where technology is, regardless of the concerns that are not answered.

Mr. Addington, you gave me an idea during your testimony and reminded me of something I had forgotten. Four or 5 years ago, right after I came over from the House in 1995, I was instrumental with my partner, Don Nichols from the State of Oklahoma, in passing a bill that addresses the problem I know concerns you and you articulated. That is that you have a bunch of unelected bureaucrats not just in EPA but in other bureaucracies also who make decisions with no regard for how the public is going to be affected by them.

I have said many times in the event we make that dramatic change in this Administration and this committee—and I speak for Bob Smith when I say this also—we are going to have sound science, we are going to use CASAC for the design purpose, we are going to have cost-benefit analysis and everything, including endangered species and how it affects what the cost is. Let the public be involved in this.

Since the rush is on to make this happen in December, and since the objections that I raised have not yet been answered, I am going to supply the EPA with a list of my concerns I think should be met by the time this rule goes into effect. If not, I am going to take advantage of that law we passed in 1995, called the congressional Review Act. That addresses the very thing you bring up.

In the event there is something that we, who are the elected officials who have to respond to an electorate, the people of America, believe that something is onerous and is not properly addressing the concerns that should be addressed, then we can effectively veto it with a simple vote by bringing this congressional Review action to this committee as well as the committee in the House, have it go directly there to the floor and by a simple vote, overturning this.

If these objections I have to this rule are not met, I am going to put the EPA on notice that I will invoke the provisions of the congressional Review Act on this rule.

With that, we have run out of time. We have a vote in progress, so we are adjourned.

[Whereupon, at 11:06 a.m., the subcommittee was adjourned, to reconvene at the call of the chair.]

[Additional statements submitted for the record follow:]

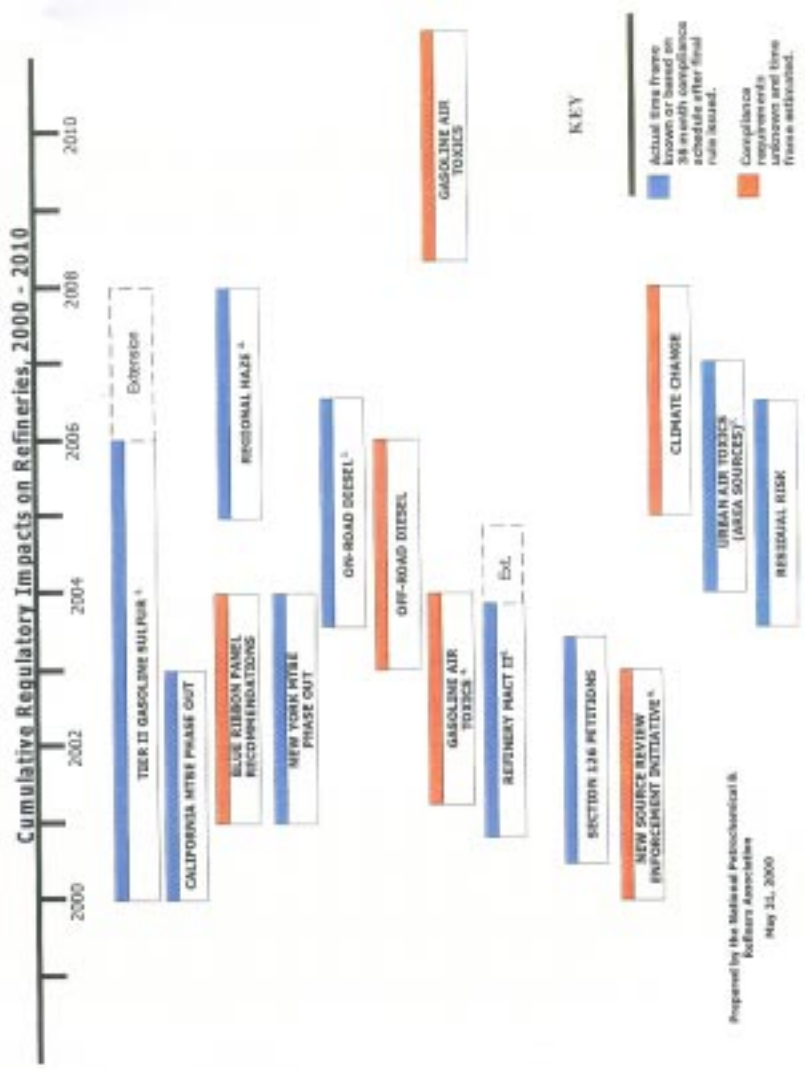
STATEMENT OF HON. JOSEPH LIEBERMAN, U.S. SENATOR FROM THE STATE OF CONNECTICUT

Thank you, Mr. Chairman, for holding this hearing on a regulation that so directly affects the quality of our air. I would just like to make a few comments highlighting the reasons for my support of the action on diesel fuel sulfur that is proposed by the Environmental Protection Agency.

My home State of Connecticut faces serious air quality challenges, as do many of the States in New England. Some Northeastern States need to make drastic reductions in both nitrogen oxides and volatile organic compounds in addition to those anticipated from current and planned stationary source and motor vehicle emission control programs in order to fulfill the requirements of their State implementation plans. There are also significant challenges for some northeastern States in attaining EPAs National Ambient Air Quality Standards for ozone. Ambient toxic pollutant concentrations are a further concern: measured annual average concentrations of benzene, formaldehyde, and other toxics have been shown to exceed cancer risk thresholds in all monitoring locations in this region.

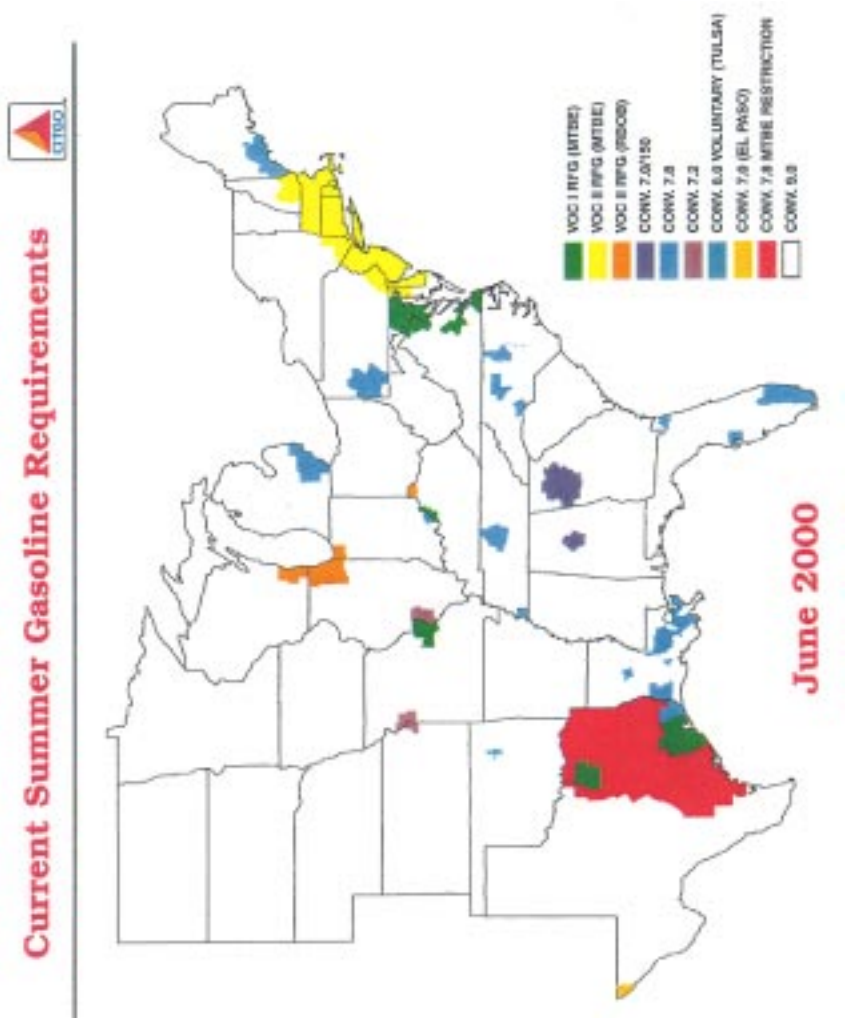
With challenges of this nature, the Northeast appreciates EPAs action on diesel sulfur. The proposed regulation on diesel sulfur will significantly reduce the cap on sulfur in diesel fuel. It is sorely needed, for heavy-duty vehicles are significant contributors to elevated levels of ozone, fine particulate matter (PM), and the primary emissions of several key toxic air pollutants of concern in the region. Together, highway and non-road heavy-duty engines are responsible for roughly 33 percent of all nitrogen oxide (NO_X) emissions, 75 percent of motor vehicle related PM, and 60 percent of aldehyde emissions in the northeast corridor. Diesel exhaust has also been classified as a probable human carcinogen by the National Institute for Occupational Safety and Health (NIOSH) in 1988, the International Agency for Research of Cancer (IARC, 1989) and the U.S. EPA (U.S. EPA draft, 1994).

For these reasons, I feel that this proposed regulation is a beneficial one. I realize, however, that there are concerns about the implementation of the regulation, and I am interested in finding out more about these concerns. I look forward to hearing from the witnesses.


Cumulative Regulatory Impacts on Refineries, 2000 - 2010
2000
2002
2004
2006
2008
2010
TIER II GASOLINE SULFUR [1]
Extension
CALIFORNIA MTBE PHASE OUT
BLUE RIBBON PANEL RECOMMENDATIONS
REGIONAL HAZE [2]
NEW YORK MTBE PHASE OUT
ON-ROAD DIESEL [3]
OFF-ROAD DIESEL
GASOLINE AIR TOXICS [4]
REFINERY MACT II [5]
Ext.
GASOLINE AIR TOXICS
SECTION 126 PETITIONS
NEW SOURCE REVIEW ENFORCEMENT INITIATIVE [6]
CLIMATE CHANGE
URBAN AIR TOXICS (AREA SOURCES) [7]
RESIDUAL RISK
KEY
Actual time frame known or based on 36 month compliance schedule after final rule issued.
Compliance requirements unknown and time frame estimated.
Prepared by the National Petrochemical & Refiners Association
May 31, 2000

FOOTNOTES:

1. Longer compliance time for small refineries in some mid-western and western states and small refineries covered by SBREFA.
2. Regional haze SIPs due 2005-2007. Earliest compliance date. Schedule may be impacted by NAAQS litigation
3. EPA has issued NPRM on May 17, 2000.
4. CAA Section 202 (l) final rule expected December 2000.
5. Compliance date may be harmonized with Tier II schedule.
6. Based on EPA statements to press. Estimated date for implementation
7. Urban Air Toxics Strategy includes controls for gasoline distribution and oil and gas production sources. Estimated compliance schedule.



STATEMENT OF ROBERT PERCIASEPE, ASSISTANT ADMINISTRATOR, OFFICE OF AIR AND RADIATION, ENVIRONMENTAL PROTECTION AGENCY

Thank you, Mr. Chairman and members of the subcommittee, for the invitation to appear here today to discuss our proposed program that addresses emission standards for heavy-duty trucks and buses and the accompanying low sulfur requirement for diesel fuel.

As you know, last year we established a new program to dramatically reduce emissions from cars and light-duty trucks. That program, often called the "Tier 2" program, will help to improve the nation's air quality by phasing in both cleaner engines and cleaner burning gasoline over the next decade, using flexible, market-driven mechanisms that minimize consumer costs while preserving vehicle choice.

We are now focusing much-needed attention on heavy-duty highway vehicles, applying the same general principles of addressing the vehicles and the fuel as a single system, and incorporating flexible compliance mechanisms for the affected industries.

This proposed program would protect the public health and the environment of all Americans by reducing the sulfur content in highway diesel fuel by 97 percent

to provide for dramatically cleaner heavy-duty trucks and buses. By addressing diesel fuel and vehicles together as a single system, harmful emissions from heavy trucks and buses would be reduced up to 95 percent from today's levels—the clean-air equivalent of eliminating the air pollution from 13 million of today's trucks.

JUSTIFICATION FOR ACTION

Heavy-duty trucks and buses are largely powered by diesel engines, and the importance of diesel continues to grow with the steady increase in truck traffic on our roads, the continuing trend toward replacing heavy-duty gasoline-powered trucks with diesels, and the prospects for a resurgence in light-duty diesel vehicle sales, as evidenced by auto manufacturers' ambitious plans and investments in this area. Diesel engines are more durable and get higher fuel economy than gasoline engines, but they also pollute significantly more. Harmful emissions from these engines contribute greatly to a number of serious air pollution problems, and will continue to do so into the future absent further controls to reduce these emissions. The program we proposed would finally bring diesel emissions on par with those of new, cleaner cars.

In our proposal, published on June 2, we assessed the need for further reductions in emissions from heavy-duty trucks and buses beyond the reductions that will result from new diesel standards set to take effect in 2004. We based this assessment on projections of air quality trends in the U.S. and on the expected contribution of heavy-duty vehicles to these trends. Our conclusion is that if we do not act soon, despite several years of progress in reducing diesel emissions, pollution from heavy-duty trucks and buses will rise in the next 15 years, with serious repercussions for the nation's air quality.

Heavy-duty vehicles contribute to the health and welfare effects of ozone, as well as particulate matter (or "PM"), oxides of nitrogen (or "NO_X"), oxides of sulfur, and volatile organic compounds that include toxic compounds such as formaldehyde. These adverse effects include premature mortality, aggravation of respiratory and cardiovascular disease, chronic bronchitis, and decreased lung function. Pollutants from these vehicles also contribute to crop and forestry losses; they contribute to visibility impairment in many parts of the U.S.; and to the acidification, nutrification and eutrophication of bodies of water.

Millions of Americans live in areas with unhealthy air quality that endangers public health and welfare. Forty-two metropolitan areas with a total population of 123 million people have recently violated or are close to violating the 1-hour ozone national ambient air quality standard (or "NAAQS"), and have ozone modeling or other factors which indicate a risk of future NAAQS violations. The emission reductions that would come from the proposed standards will reduce the number of future violations of the ozone NAAQS in these areas. Furthermore, our analysis shows that PM_{-10} concentrations in 10 areas with a combined population of 27 million people face a significant risk of exceeding the PM_{-10} NAAQS without significant additional controls in 2007 or thereafter. PM_{-10} is particulate matter that is 10 microns or less in size. Under the mandates of the Clean Air Act, government agencies at the Federal, State, and local levels are working to bring pollutant levels into compliance with the 1-hour ozone and PM_{-10} NAAQS through their State Implementation Plans, and to ensure that future air quality continues to maintain these health-based standards. The reductions proposed in this rulemaking would play a critical part in these important efforts.

In addition to its contribution to PM_{-10} inventories, diesel exhaust particulate matter is of special concern because it has been implicated in increasing the risk of lung cancer and respiratory disease in human studies. The current EPA position is that diesel exhaust is a likely human carcinogen and that this cancer hazard applies to environmental levels of exposure.

Emissions from heavy-duty vehicles account for substantial portions of the country's ambient PM and NO_X levels. NO_X is a key precursor to ozone formation. By 2007, we estimate that heavy-duty vehicles will account for 29 percent of mobile source NO_X emissions and 14 percent of mobile source PM emissions. These proportions are even higher in some urban areas, such as in Albuquerque, where heavy-duty vehicles contribute 38 percent of the mobile source NO_X emissions and 21 percent of the mobile source PM emissions. A number of urban areas have begun to examine the potential for even greater emission "hot spots" caused by such factors as frequent bus and truck routes.

The proposed program would have a substantial impact on these emissions. By 2030, NO_X emissions from heavy-duty vehicles under the proposed program would be reduced by 2.8 million tons, and PM emissions would decline by about 110,000 tons, dramatically reducing this source of NO_X and PM emissions. Urban areas,

which include many poorer neighborhoods, can be disproportionately impacted by diesel emissions, and these neighborhoods would thus receive a relatively larger portion of the benefits expected from new emissions controls.

PROCESS

Our proposal is the culmination of a year-and-half long deliberative process during which we worked closely with a wide range of stakeholders. Following a number of meetings with the manufacturers of engines and emissions controls, the oil refining industry, States, public health and environmental organizations, we published an advance notice of our intent to propose this program in May of last year. That notice defined the challenges and opportunities involved, and yielded further helpful information and discussion during a public comment period that in turn informed a new round of stakeholder meetings over the past year. These meetings included extensive discussions with small refiners and small businesses that market and distribute diesel fuel, under the process created by the Small Business Regulatory Enforcement Fairness Act (SBREFA). EPA has spent many hours in meetings with individual companies, trade associations, State organizations, environmental groups, and other parts of the Federal Government, to understand their issues and ensure that they are fairly addressed in the proposal.

In the end, we believe we developed a proposal that addresses the many issues people raised with us, and that can achieve dramatic emission reductions in a cost effective manner, without placing large burdens on small businesses and consumers. On the few issues for which a clear answer did not emerge at this stage, the proposal contains detailed discussion of viable solutions that have been put forward and asks for comment to help us determine the best approach.

PRINCIPLES

There are a number of overarching principles reflected in the proposal that we feel will make this an effective program:

- First, address the heavy-duty vehicle and its fuel as a single system to achieve cost-effective emissions control that is dramatically better than what we could get with separate fuel and vehicle programs;
- Second, set consistent standards for vehicles and fuel that apply nationwide;
- Third, set performance standards and provide flexible provisions for engine designers and diesel fuel refiners, including small refiners, to demonstrate compliance;
- Fourth, minimize costly requirements for people who sell and distribute diesel fuel; and
- Fifth, design the clean highway diesel fuel program to also enable the use of advanced emission controls for all on-highway diesel vehicles.

VEHICLE PROGRAM

In the past, diesel manufacturers primarily controlled emissions through the design of the engine itself, rather than relying on exhaust emission control devices like the catalytic converter used in automobiles. However, new advanced technologies for diesel exhaust treatment are now being developed and tested and they are proving to be extremely effective. Particulate matter traps, or ''soot filters,'' that replace a truck's muffler, are already used in several thousand heavy-duty vehicles in Europe where the right fuel is available, and they work very well, achieving reductions in soot and toxic hydrocarbons of 95 percent and better.

Emissions of the other major diesel pollutant, NO_X, can be dramatically reduced by putting devices called NO_X adsorbers in the exhaust system. NO_X adsorbers have proven effective in stationary source applications in making dramatic reductions in emissions. Although, in mobile sources adsorbers have not yet developed to the point where they are being used in demonstration fleets, NO_X adsorbers have proven control efficiencies of 90 percent and better in laboratory testing, and rapid progress continues to be made in improving this technology.

These soot filters and NO_X adsorbers can be designed into a new diesel vehicle at a total projected cost of $1,000 to $1,600 in the long term, depending on the size of the engine. For comparison, new vehicle prices today can range up to $250,000 for larger heavy duty vehicles. With the use of these new technologies, and by optimizing existing engine controls, these standards can be met without increasing fuel consumption beyond today's levels.

Our proposed emission standards envision the use of these or similar technologies beginning in the 2007 model year, although we are proposing to phase in the NO_X standard over 4 years, from 2007 to 2010, to provide flexibility in introducing the newly developed NO_X adsorbers. We are not proposing to retrofit older engines.

Specifically, the standards we are proposing are 0.2 grams per brake horsepower-hour for NO_X, and 0.01 grams per brake horsepower-hour for particulate matter. These levels are an order of magnitude lower than the standards set to take effect in 2004, which are based only on engine technologies. In addition, because soot filters are extremely effective at removing emissions of toxic hydrocarbons, these emissions will be likewise reduced to a tiny fraction of current levels.

Heavy-duty gasoline vehicles would also be required to meet stringent standards, and would likely meet these standards through use of control technologies similar to those being developed for cars and light-duty trucks under the Tier 2 standards. We are also proposing to cut evaporative emissions from gasoline-powered trucks by half through improvements in vehicle design.

DIESEL FUEL PROGRAM

There is one major technical barrier to the introduction of the new diesel exhaust emission control technologies, which brings me to why we are proposing to address diesel engines and diesel fuel as a single system. Soot filters and NO_X adsorbers are very sensitive to sulfur in the fuel, even more so than gasoline engine catalytic converters. Sulfur ruins these devices by poisoning catalyst sites within them; it also causes the devices to emit harmful sulfate emissions; further, it causes greater fuel consumption. This situation is not unlike the move to catalytic converters on cars in the 1970's. Those were also revolutionary technologies that required a change in the fuel, in that case taking the lead out of gasoline, to achieve their remarkable emissions reduction potential. To make the new diesel technologies work we are proposing to take most of the sulfur out of highway diesel fuel, by mid–2006 when the cleaner, model year 2007 trucks will begin showing up on our nation's roadways.

Specifically, we are proposing that sulfur levels in diesel fuel produced and sold for use in highway vehicles be limited to 15 parts per million. This is a 97 percent cut from the current highway diesel fuel sulfur limit of 500 parts per million, set by EPA 10 years ago. Our analyses show that the 15 parts per million level is sufficiently low to enable the high-efficiency exhaust emissions control technologies, and still feasible to produce with existing refinery technologies.

In our proposal, we also analyze the cost and feasibility of requiring a larger sulfur reduction of 99 percent, sought by some engine manufacturers, and a smaller reduction of 90 percent sought by some refiners. Our analysis results show that a larger sulfur reduction would cost significantly more and does not appear to be needed to make the exhaust emissions control technologies work, and that smaller reductions in sulfur, although cheaper, would likely cause these devices to fail on the road, thus enabling only "next best" technologies with 20 percent reduction efficiencies and sizable fuel economy losses. Although we believe that we have proposed the right sulfur level, we have asked for comment on these higher and lower levels, and also on levels in between.

It is interesting to note that diesel fuel with sulfur levels below this level has been in widespread production in Sweden for many years, and ARCO is producing diesel fuel in California with sulfur levels well below the proposed level.

The investments that the oil industry will need to make to support this proposed program, and the resulting costs to consumers, have been, and will continue to be, a major focus of the rulemaking process. We estimated that the cost to produce and distribute the low sulfur diesel fuel would typically be about four and a half cents per gallon. We estimate that this cost would be offset by a penny or so per gallon savings because the cleaner fuel makes a diesel engine run better, reducing oil change intervals and the like. This maintenance benefit would occur not just for the new model trucks and buses equipped with the new technology emissions controls, but for the existing fleet as well.

We designed this proposed program to include significant lead time for the introduction of new cleaner fuel into the marketplace. The proposal also discusses various flexible phase-in approaches for the diesel fuel industry to facilitate the complete transition to new clean diesel fuel and to reduce costs further. We explored a number of concepts aimed at providing voluntary compliance flexibility for refiners while still meeting our primary goal of widespread availability of low-sulfur diesel fuel when needed by the new technology trucks. These concepts recognize the fact that many older trucks that do not need the lower sulfur fuel will be on the road for several years into the proposed program. One such concept would allow each refiner to produce some highway diesel fuel at the current 500 parts per million sulfur limit, with provisions to bank and trade these allowances for greater flexibility.

The ability of small refiners and farmers' cooperative refiners to comply with the proposed program has been of special concern through the process to develop this

proposal, and several added flexibility concepts that were developed by the SBREFA Small Business Advocacy Review Panel are discussed in the proposal, with the goal of designing a workable program for them in the final regulation.

PUBLIC HEARINGS

To gather reaction to our proposal, we are holding five public hearings over the next 2 weeks: In New York, Chicago, Atlanta, Los Angeles, and Denver. We expect that all of the hearings will be well-attended and many people and groups representing a variety of viewpoints have already told us that they plan to testify. We will be accepting written comments through August 14th. We are also continuing to meet with stakeholders on an individual basis to better understand their concerns and suggested solutions. Our plan is to complete this process and issue final requirements by the end of this year.

CONCLUSION

In conclusion, I would like to say that this historic proposal would be a major milestone in our nation's drive toward clean air, comparable to the advent of catalytic converters on cars in the 70's. Diesel trucks would be 95 percent cleaner than today's cleanest models, cleaner even than today's natural gas vehicles. This proposal has received support across the country from people in various sectors affected by it. This support has given us confidence that we are on the right track in developing a nationwide program that is sensible, balanced, and cost-effective.

Thank you again for giving me this opportunity to discuss our program with you. I would be happy to answer any questions that you may have.

STATEMENT OF JERRY THOMPSON, CITGO PETROLEUM COMPANY, ON BEHALF OF THE NATIONAL PETROCHEMICAL & REFINERS ASSOCIATION, TULSA, OK

OVERVIEW

The National Petrochemical & Refiners Association (NPRA) represents almost all of the refining industry including large, independent and small refiners as well as petrochemical producers. NPRA supports a 90-percent reduction in the sulfur content of highway diesel fuel to a 50-ppm sulfur cap. In contrast, we are deeply concerned about the impact EPA's new diesel sulfur program will have on the industry's ability to provide a steady and reliable source of diesel fuel to its customers.

NPRA does not believe that it is possible to consistently maintain needed supplies of highway diesel within the 15 ppm sulfur cap level sought by EPA. Although refineries may be able to produce some amount of this diesel, many would be forced by its high costs to limit or forego participation in the highway diesel market. This would reduce supplies well below those available under a more realistic sulfur cap. In addition, with the current logistics infrastructure, it will be extremely difficult to deliver highway diesel with a 15 ppm sulfur cap to consumers and maintain the integrity of the sulfur level of the product. This highway diesel must share a distribution system with other products that have significantly higher sulfur levels. At the EPA's proposed sulfur levels, a significant amount of highway diesel will have to be downgraded to a higher sulfur product due to product contamination in the pipeline.

The diesel plan announced on May 17th by the EPA is extreme, a blueprint for fuel shortages and future supply problems, and will pose severe economic impacts. It threatens to leave American consumers a legacy of scarce and costly energy supplies.

ROLE OF DIESEL IN U.S. ECONOMY

The trucking industry, America's motoring public, farm communities, commercial vehicle operators and others must all be assured a consistent and reliable source of supply. These vital industries may be severely impacted by reduced supplies and increased costs resulting from this rulemaking, and the consequent effect on the economy will be widespread.

Vehicles powered by heavy duty diesel are an essential element in the commercial distribution of goods and services in the United States. The EPA regulators must assess the decisions they are making and weigh the risks which new, costly and unrealistic standards could have on the country's ability to move goods and services. A reliable source of diesel supply for these customers could be threatened if the EPA proposal becomes final.

REFINERS OFFERED A REASONABLE PLAN TO REDUCE SULFUR

The refining industry agrees that the sulfur levels in diesel must be reduced, but the program must be reasonable. The industry proposed a plan to EPA that would lower the current limit of 500 ppm of sulfur in diesel fuel to a limit of 50 ppm—a 90 percent reduction. This is a very significant step. It will enable diesel engines to meet the particulate matter standards sought by EPA and also achieve significant NO_X reductions. Our plan can yield a 90 percent reduction in particulate matter and a 75 percent reduction in NO_X emissions from new heavy-duty diesel engines. Industry's plan is still expensive—we estimate it will cost the industry roughly $4 billion to implement. But, unlike EPA's extreme and much more costly proposal, the level of sulfur reduction proposed by industry is attainable and sustainable. Most refiners would choose to make the investments needed to meet a 50 ppm sulfur limit. Most refineries will be able to comply with this 90 percent reduction by making capital investments to upgrade existing facilities or by building new capacity.

The industry has shared this proposal with regulators. NPRA and its members have had protracted discussions with EPA and have tried to suggest reasonable ways to reduce diesel emissions. Unfortunately, industry's plan has been rejected and ignored by EPA.

OVERLAPPING FUEL STANDARDS

Implementing gasoline and highway diesel sulfur reduction and MTBE reduction concurrently will tax resources of the engineering and construction industries, as well as State permitting agencies. Implementation of a new 50 ppm low sulfur cap diesel program in a more reasonable timeframe (after gasoline sulfur reductions) would reduce the peak demands on the engineering and construction industry or State permitting agencies. EPA's proposed overlap—with gasoline sulfur reduction phased-in between 2004 and 2007 and extreme highway diesel sulfur reduction completed in 2006—jeopardizes both programs.

This subcommittee may recall that the refining industry is already implementing an $8 billion (6–7 cents per gallon) program to reduce sulfur in gasoline in the same timeframe. There are few synergies in the gasoline and diesel sulfur reduction strategies so there is no justification for doing both concurrently.

EPA'S PLAN WILL JEOPARDIZE DIESEL SUPPLIES

EPA's plan will not maintain adequate diesel supplies. NPRA does not believe that it is possible to produce needed supplies of highway diesel nationwide within the 15 ppm sulfur cap level. Although refiners may be able to produce some amount of this diesel, many would be forced by its high costs to limit or forego participation in the highway diesel market. EPA's plan would reduce supplies well below those available under a more realistic sulfur cap.

While some refiners would invest in the expensive new equipment necessary to meet the 15 ppm limit, many others may not make the large investments necessary to produce it, especially at the same time that sulfur levels in gasoline must be greatly reduced. Since highway diesel is only about 10 percent of the average refinery's output, refiners could find other uses or markets for their current diesel output. More than 30 percent of the current supply of highway diesel could be lost until additional investments are made and new desulfurization capacity is built. This could take as long as 4 years. Also, some refineries will probably go out of business. When a refinery closes, we lose its entire output—gasoline, diesel, jet fuel, home heating oil. With the demand for petroleum products projected to increase, we cannot afford to lose any refineries. This is a very strong argument for a more reasonable program.

It will be extremely difficult to deliver highway diesel with a 15 ppm sulfur cap to consumers and almost impossible to maintain the integrity of the sulfur level of the product. These products must be delivered though common carrier pipelines. Recent studies concluded that it would probably not be feasible for the distribution system to maintain low sulfur diesel fuel supplies in all areas. Spot outages will probably occur and there will be reduced flexibility to deal with unusual market conditions.

TECHNICAL DECISIONS REFINERS FACE

Today's highway diesel is produced from blendstocks containing several thousand ppm sulfur. Currently, sulfur is reduced by hydrotreating. The typical existing diesel hydrotreater at a refinery can be modified to produce a product meeting industry's proposed 50 ppm sulfur limit.

Some existing units that are more constrained than average may not be suitable for modification to produce this lower sulfur product. The existing hydrotreater may have a lower than average operating pressure or hydrogen recycle rate, or the refinery may use a mix of blendstocks that may be harder to desulfurize. A new hydrotreater would be required at some refineries because retrofitting an existing hydrotreater alone would not be an option for every refinery. Even with industry's proposed 50 ppm sulfur cap, there could be more limited supply impacts if necessary investments are not made. Most refiners, though, would choose to make the more affordable retrofit investments needed for a 50 ppm sulfur cap.

A diesel sulfur standard at a 15 ppm sulfur cap would make modification of a typical, existing unit uneconomical. It would require such a large increase in reactor volume that a new, high pressure unit would make more sense. This new hydrotreater would require additional hydrogen compression and a thick-walled pressure vessel. The worldwide manufacturing capability for high pressure vessels is limited to a handful of suppliers and could be a significant constraint on providing adequate supplies of ultra low sulfur diesel in the proposed timeframe.

Thus, a 15 ppm sulfur limit would require a decision to invest in an expensive new high pressure desulfurization unit or retrofit an existing unit to process only the lower sulfur blendstocks. If several refineries choose the latter option, supplies of highway diesel would decline from current levels. It would take some time to correct this supply/demand imbalance.

Even with investment in a new hydrotreater, compliance with a 15 ppm sulfur limit would not be guaranteed at today's highway diesel production volumes. Currently, vendors do not have commercial experience treating feeds containing a significant amount of cracked material to meet a 15 ppm sulfur cap. Therefore, the capital-intensive option will not necessarily satisfy domestic demand because some of the current feedstocks are very difficult to desulfurize at the greater than 99 percent reduction levels required by a 15 ppm sulfur limit. In summary, although it is possible to produce some highway diesel under 15 ppm sulfur, it is not technically possible to produce 15 ppm sulfur highway diesel at current volumes on a continuous basis.

DISTRIBUTION OF ULTRA LOW SULFUR HIGHWAY DIESEL IS NOT FEASIBLE

The distribution system will not be able to provide ultra low sulfur highway diesel supplies at all times. It will be very difficult to maintain the integrity of a 15 ppm sulfur cap when diesel is distributed in pipelines, barges and trucks which also carry gasoline with a cap of 80 ppm sulfur in 2006 and high (greater than 2,000 ppm) sulfur jet fuel, home heating oil and off-highway diesel.

Spot outages will occur if a product terminal discovers that the ultra low sulfur diesel is out of compliance for whatever reason. Nearly all or all of the non-compliant product would have to be removed (and perhaps the terminal tank cleaned) before new product could be brought in. In the past, a product at was slightly out of compliance could be blended with complying product; however, at ultra low sulfur levels, this will not be an option.

NPRA SUPPORTS ONLY ONE GRADE OF HIGHWAY DIESEL

EPA is considering a phase-in program with two types of highway diesel available for a few years: current diesel (500 ppm cap) and ultra low sulfur diesel (15 ppm cap). Phase-in would create its own distribution and enforcement problems with significant potential of misfueling by new trucks. This alternative would not effectively address NPRA's concerns about technical producibility and maintaining product quality. The short period while two products would be in the marketplace guarantees that investments to distribute and segregate them will be stranded when the temporary program expires. The market may not be stable and balanced throughout the program as the existing fleet of trucks tries to chase dwindling supplies of the higher sulfur, lower cost highway diesel.

LYONDELL/CITGO EXPERIENCE

Industry's repeated warnings about this rule are well-founded. Our company, CITGO, has some relevant real-world experience: in the EPA's proposed rule, our facilities at the Lyondell-CITGO Refinery (Houston) were referenced as having a diesel desulfurization technology capable of producing the 15 ppm sulfur cap diesel fuel. Based on our actual operating experience with this referenced technology, we find the capital and operating costs are much higher at the 15 ppm sulfur cap. The ability of the technology to consistently produce below 15 ppm diesel is problematic. The feedstocks to this revamped facility are 30 percent straight run stocks from the crude distillation unit and 70 percent heavy cracked stocks from conversion units.

These heavy cracked stocks are significantly more difficult to treat to the 15 ppm level. Our operating data shows that to consistently desulfurize to 15 ppm or below, a significant portion of the cracked material must be removed from the feed, thereby reducing our diesel production by this amount.

Our first cost consideration is the use of capital. The Lyondell-CITGO project to improve our diesel quality was completed in late 1996 and included the installation of the world's largest free-standing reactor. We increased catalyst volume in the unit from 40 thousand pounds to 1.7 million pounds. The capital cost for conversion of this existing 50,000 BPSD Unit was $86 million dollars. This includes $69 million dollars for the process unit and $17 million dollars for supporting facilities. This is much higher than the $30 million revamp cost for a typical refinery processing light cycle oil as stated by the EPA. Also, a simple retrofit is not possible on many units because most older, smaller units do not have sufficient reactor design pressures, the requisite high purity hydrogen supply, a suitable fractionation system, or other hardware.

The second cost consideration is operating costs. The diesel sulfur level produced in the unit meets the 15 ppm sulfur cap at *initial conditions* at start of run. However, as the desulfurization catalyst ages, the reactor temperatures must be raised to achieve targeted sulfur levels. There are limits to raising temperature—equipment and product quality limits—such as color. These limits establish the cycle life of the catalyst.

At the proposed 15 ppm sulfur cap with 70 percent heavy cracked diesel stocks, the cycle life will be greatly reduced from current operation. This significantly raises the operating cost because of more frequent catalyst replacement and more frequent shutdowns. This also results in a *loss* of diesel production. Under the current mode of operation, the frequency of catalyst change-out is managed by reducing the cracked stocks in the feed to this unit. More frequent catalyst change-out to meet a 15 ppm sulfur cap raises the cost of diesel production by as much 7 cents/gallon on our existing unit.

What looks simple in theory doesn't always work in practice. I hope that the entire refining industry doesn't have to spend billions of dollars just to prove that our concerns about this rule are valid. This will happen, however, if we ignore the warning signs of an already stressed supply system, and rush to implement a plan based upon little more than wishful thinking. We can't make enough diesel at the 15 ppm level and what we can produce will cost much more than EPA represented.

AVAILABILITY OF AFTERTREATMENT TECHNOLOGIES

The proposed heavy-duty diesel engine emissions standards for particulate matter (PM) and nitrogen oxides (NO_X) will require the use of advanced aftertreatment equipment on new trucks. The PM control technology is more developed than the NO_X technology, and it can meet the proposed 90 percent reduction in the emissions standard using a diesel fuel that is limited to 50 ppm sulfur. The PM standard chosen by EPA appears to be technically feasible with refining and emissions control technologies that are ready for commercialization. So EPA's PM standard is achievable using the industry's recommended 50 ppm fuel.

However, the various NO_X control technologies being considered by vehicle manufacturers are much less developed. EPA's decision to reduce the NO_X standard by 90 percent is likely to focus development efforts on an emerging technology that is the most delicate of those being considered. EPA's choice of this NO_X standard is purely arbitrary. It is unrealistic and considerably more stringent than the NO_X standard for the same period in Europe and Japan. Even with a sulfur limit of 15 ppm, this technology may not meet the durability requirements of the proposed standard. NPRA recommends that EPA set a more realistic NO_X emissions standard, one that would rely on more developed and more robust emissions control technologies and a technically feasible diesel fuel with a sulfur limit of 50 ppm.

FUELS TRANSPORTATION SYSTEMS CAN BECOME SEVERELY STRESSED

The "regulatory blizzard" chart attached to our testimony shows 14 major regulatory actions which the refining industry will be required to comply with over the next 10 years. The cost of these programs, which are largely uncoordinated, is astronomical. Gasoline sulfur reduction, diesel sulfur reduction and MTBE reduction alone will probably cost the industry a combined total of $20 billion.

During the 1990's the refining industry was also called on to make massive environmentally related investments, totaling more than the actual book value of the entire industry, according to one study. At the same time, the average rate of return on capital in the industry was just 2 percent, which is less than banks pay on a passbook savings account.

As a result of this crushing burden on refiners and fuel distributors, we are starting to see signs of stress in the system. Increasing stringency of fuel specifications makes them more difficult to produce and harder to distribute. And the impact of unforeseen situations, such as a refinery outage, a pipeline malfunction or even the weather, is magnified under such conditions.

We experienced disruptions in the supply of home heating oil and diesel in the Northeast just last winter. Currently, logistical and supply problems in the Midwest, especially in the RFG markets of St. Louis, Chicago and Milwaukee, have resulted in increased gasoline costs. This situation occurs just as the industry is implementing changes to a new grade of reformulated gasoline, with more stringent requirements. These occurrences are usually temporary, but they will probably occur with increasing frequency as we produce ever-cleaner fuels. Policymakers can help to reduce the frequency of these situations by insisting that environmental programs be both reasonable and well-coordinated. The proposed diesel sulfur regulation fails on both counts. This is another reason why it should be rejected in favor of a more reasonable and timely approach, such as the industry has recommended.

CONCLUSIONS

EPA should not adopt a regulation that puts the nation's energy supply at risk. Fuel and engine emissions standards must be based on developed technologies and cost-effectiveness. An adequate supply of 15 ppm sulfur diesel cannot be assured and distribution of 15 ppm sulfur fuel is probably also not feasible. There has been no demonstration—technological or otherwise—that the 15 ppm sulfur level advocated by EPA is achievable or sustainable across the current diesel pool for most refineries.

NPRA hopes that the entire refining industry does not have to spend billions of dollars just to prove that our concerns about this rule are valid. This will happen, however, if we ignore the warning signs of an already stressed supply system and rush to implement a plan based upon little more than wishful thinking. EPA argues its extreme proposal is needed to enable heavy-duty engines to meet stringent NO_X standards in the 2007–10 timeframe. Of course, that NO_X standard was arbitrarily selected by EPA. It is considerably lower than NO_X standards for the same period in Europe and Japan, and is probably unrealistic. Thus, EPA's $10 billion plan for 15 ppm diesel is largely based upon an arbitrary and unattainable target.

NPRA wants to work with other stakeholders to achieve reasonable, cost-effective reductions in highway diesel emissions. Our industry wants to maintain the right balance between environmental goals and energy supply so we can implement fuel and emissions standards. This way, both the fuel and engine industries can comply with costs that consumers can afford.

STATEMENT OF J. LOUIS FRANK, MARATHON ASHLAND PETROLEUM

The American Petroleum Institute (API) is pleased to have the opportunity to present written testimony on the U.S. Environmental Protection Agency's (EPA's) Highway Diesel Sulfur Proposal. API represents nearly 500 companies engaged in all aspects of the U.S. oil and natural gas industry, including exploration, production, refining, distribution and marketing.

Background

EPA has proposed a rule to reduce highway sulfur in diesel fuel to unnecessarily low levels beginning in 2006. API supports the clean air benefits of lower sulfur levels and proposes a 90-percent reduction. Lower sulfur means cleaner air. However, EPA's proposal goes beyond what is practical, necessary or affordable—and would not produce significantly greater air quality improvements than API's proposal (see Attachment I). It could depress diesel fuel production and unnecessarily harm those who rely on diesel fuels: truckers, distributors of goods and services and farmers as well as those in the fuel industry: refiners, fuel distributors and fuel retailers. Because diesel fuel and the trucks and buses that use it are the lifeblood of American commerce, the new rule could also harm consumers, jobs and the economy.

What the proposal says

EPA's proposal would require that highway diesel fuel sulfur content be reduced from the current level of 500 parts per million (ppm) maximum to a 15 ppm maximum in 2006. API has recommended a 90-percent reduction to a cap of 50 ppm (approximately what EPA also recommended more than a year ago). A reduction to this level would reduce diesel emissions nearly as much as EPA's proposal at a more rea-

sonable cost and would enable vehicle emission reduction equipment that is tested and proven.

EPA also suggested that the new fuel might be phased in. Under a phase-in, two highway diesel fuels would have to be made and provided to retail outlets.

Additional air quality benefits minimal

The additional air quality benefits produced by EPA's proposal compared with API's proposal would be very small. That's because the industry's proposal would cut sulfur nearly as much.

In fact, EPA's proposal may not reduce emissions any more. EPA assumes its fuel will work with a new kind of vehicle emission reduction technology, but it has presented no evidence that this unproven technology will cut emissions to the desired level no matter how low sulfur content is set.

EPA's lack of confidence in its own technical assessment is unmasked by its proposal to phase in the new nitrogen oxide tailpipe standard over a period of time. The agency wanted to give engine manufacturers an opportunity to ″gain valuable experience″ with the new technology, which EPA acknowledges has not advanced to the ″field trial stage.″ However, this approach is unfair to truckers and other diesel fuel users who should not have to pay for changes in the fuels they use when there is no promise that the vehicles they drive will perform as intended.

Not a solution to diesel smoke

While EPA's proposal will reduce vehicle emissions, it is not a solution to the diesel smoke problem. A reduction in sulfur in any amount will have little impact on this. Modern diesel engines are virtually smokeless even on current fuels. The vast majority of smoking trucks on the road today are older and poorly maintained. Improved vehicle maintenance is the key to solving the smoke problem.

Costs of the EPA proposal would be excessive

As a result of EPA's proposal, diesel manufacturing costs would increase about 12 cents per gallon ($8 billion in capital investments to modify refineries). These costs would far exceed the capital investments needed for API's proposal of a 90-percent reduction. A 90-percent reduction would add about 6 cents per gallon ($4 billion in capital investments).

These added manufacturing costs do not include higher costs for distribution, stemming from the need for companies to avoid or address contamination problems resulting from moving ultra-low sulfur diesel fuel through common pipelines and storage facilities with other products. The added distribution costs for a 15 ppm fuel would increase costs by about 2 cents per gallon.

According to a February 2000 study by Turner, Mason & Company titled Costs/ Impacts of Distributing Potential Ultra Low Sulfur Diesel″ (see Attachment II for Executive Summary), a phase-in of ultra-low sulfur diesel could increase costs by about four cents per gallon, or as high as 13 cents per gallon, depending on how the phase-in works. A phase-in would require companies to manufacture, handle and segregate two separate varieties of highway diesel in addition to off-road diesel fuel. This would require installation of additional underground tanks, piping and pumps. Some distributors may not be able to make the required investments—or may not have space to accommodate the changes at some of their retail stations.

Proposal could affect supplies

Some refiners may be unable to make the huge investments needed to make 15 ppm sulfur diesel, especially in light of other investments necessary to reduce sulfur in gasoline and to address oxygenates. As a result, some, including small farmer-owned refineries, may not be able to stay in business. They would join more than 25 other U.S. refineries that have closed over the past decade, owing in part to the high costs of regulations and rates of return averaging about three percent, less than a passbook savings account.

Among refineries that stay in business, some could reduce the amount of highway diesel fuel they manufacture. Ultimately, less diesel fuel would be produced in the United States, which would tend to push up prices. It is questionable whether shortfalls could be made up with imports given the stringency of EPA's 15 ppm proposal compared to the rest of the world.

The Turner Mason study also concluded that it would probably not be feasible for the distribution system to maintain continuously available supplies of extremely low sulfur diesel in all areas. Spot outages could occur for up to a week or longer in some less populated regions that are remote from source refineries.

Diesel users and consumers would be harmed

EPA's proposal could add about $2,500 to the cost of a trucker's annual operations in higher diesel fuel costs and reduced fuel economy (see Figure 1). A phase-in could

drive those additional costs even higher. This assumes a truck is driven 100,000 miles annually at six miles per gallon. These new cost burdens do not include the higher cost of new trucks with required emission reduction equipment, which would be several thousand dollars more ($4,000 to $8,000 according to some automotive engineering experts).

All owners of truck fleets, including small businesses, could see their cost of doing business increase substantially as a result of higher fuel costs. The higher costs would also adversely impact businesses such as bakeries, nurseries and others that operate small fleets of diesel vehicles. Since the cost of moving goods would increase, consumers would pay more for food, clothing, and other products.

If there are fewer refiners and suppliers of fuels, this could increase the potential for supply disruptions, particularly to more remote rural markets that serve the farm sector, thus affecting supplies of highway and off-road diesel fuel. EPA claims that new diesel trucks and buses could be permanently damaged if any fuel other than EPA's 15 ppm is used. Thus, owners and operators of new trucks would have to shut down their operations if 15 ppm fuel supplies were disrupted for any reason, including natural disasters or unexpected physical interruptions.

Since this proposal, in combination with all the other EPA controls on transportation fuels and refineries, could reduce the number of suppliers of fuels, it could impact the home heating oil and other specialty fuels markets, including aviation fuels. The U.S. Department of Defense has raised concerns about possible impacts on military fuels.

Other groups have expressed concerns about EPA's proposal

The negative impacts of EPA's proposal are not just an issue for API and the refining industry. Many groups, including farmer cooperatives, fuel distributors, truckers, and others have expressed serious concerns about EPA's proposal in public forums and directly to EPA and the U.S. Department of Energy (see Attachments III, IV and V).

API appreciates the opportunity to provide testimony on this important issue, and we look forward to working closely with the federal government to address the nation's air quality and energy needs.

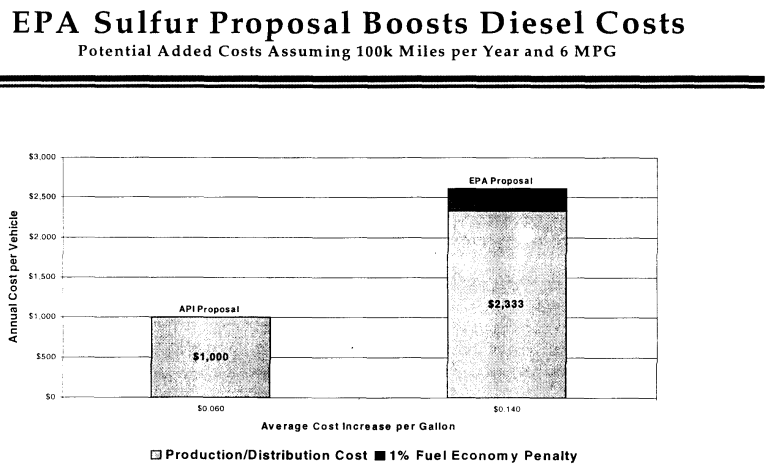


FIGURE 1

Attachment I

April 11, 2000 API Proposal to EPA

American Petroleum Institute

1220 L Street, Northwest
Washington, D.C. 20005-4070
202-682-8100

Red Cavaney
President & CEO

April 11, 2000

The Honorable Carol Browner
Administrator
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, DC 20460

Dear Administrator Browner: Carol

I am writing to express our serious concerns with the extreme sulfur reductions EPA is reportedly considering (15 ppm by 2006) in its proposed regulations on diesel fuel sulfur controls, now under review at the Office of Management and Budget. My February 7, 2000 letter to you expressed our endorsement of a 90 percent reduction in diesel fuel sulfur from today's levels which would result in a 30 ppm average and 50 ppm cap for on-highway diesel fuel. This level of reduction strikes the right balance between our nation's need for cleaner air and our need for a reliable supply of energy.

The sulfur reductions EPA is reportedly considering would result in a shut down of a portion of the nation's fuel manufacturing and supply system. To put it bluntly, our refining industry is unable to produce sufficient 15 ppm sulfur diesel, nor can our distribution system supply it across the country. That is why we joined with eight other organizations on March 13, 2000, to ask EPA to withdraw the 15 ppm proposal from OMB. Beyond the impact on our industry, we are concerned about the harm to the nation's economy resulting from any interruptions in fuel supplies.

Heavy-duty diesel-powered commercial vehicles play an essential role in the distribution of products and goods in our society, and therefore, the impacts of diesel engine and fuel controls on that transportation sector must be carefully considered before the EPA initiates this regulatory action. EPA must not take action that would result in unrealistic standards, excessive costs, and great risks of disruptions to the supply of goods and services for our society.

API member companies have invested significant time and resources to investigate the technological needs of engine and after-treatment systems, with respect to fuel quality and the level of sulfur that would enable them to meet future heavy-duty emission standards. Based on these findings, API concludes that extreme reductions to 15 ppm are not necessary to achieve significant emissions reductions. EPA has not presented sufficient information to justify levels below the 30 ppm average/50 ppm cap API has recommended.

EPA seems to be proceeding based on hope and speculation that certain types of automotive hardware will be enabled to meet arbitrarily conceived emissions standards with a 15 ppm fuel standard. The problems presented by the direction that EPA appears to be taking will not be alleviated by schemes such as phase-ins (whether voluntary or not), which would result in two grades of highway fuel. A phase-in creates its own set of enforcement and distribution problems, further increasing costs to consumers. A 15 ppm phase-in only delays the inevitable – a shutdown of a portion of the U.S. refining capacity (including part of that capacity so vital to farmer cooperatives) -- adversely affecting supply of not only highway diesel, but also home heating oil and jet fuel.

Finally, we wish to point out that any proposal for 15 ppm cap for diesel fuel could have immediate impacts on refiners ability to obtain capital to implement this and other EPA regulations. I want to stress the genuine concern that these extremely low sulfur levels present for our industry and, we believe, for the continued vigorous growth of the nation's economy. We urge your careful consideration of our concerns and are prepared to meet with you again should that be useful. Attached, API is again submitting our proposed recommendation for diesel sulfur control for the 2007 or later heavy-duty program and ask that you include this in the Notice of Proposed Rulemaking so that all the stakeholders can consider its merits.

Sincerely,

Red Cavaney

Attachment

cc: The Honorable Bill Richardson
The Honorable Robert Perciasepe
The Honorable Rodney Slater
The Honorable Thomas Bliley
The Honorable Joe Barton
The Honorable Larry Combest
The Honorable Frank Murkowski
The Honorable Richard Lugar
The Honorable John T. Spotila
The Honorable Dan Glickman
The Honorable William Daley
The Honorable John Dingell
The Honorable Rick Boucher
The Honorable Charles Senholm
The Honorable Jeff Bingaman
The Honorable Tom Harkin

Language for API's proposal in EPA NPRM for Diesel

API Proposal

In its response to the Agency's ANPRM and during the development of this proposal, a large part of the oil refining industry, represented by the American Petroleum Institute (API), offered constructive recommendations for the design of a program for the control of diesel fuel sulfur content. API represented its proposal as a cost-effective way to achieve significant emissions reductions in both PM and NOx emissions. The API proposal identified and addressed important issues such as technical feasibility, the capability of the entire fuel manufacturing and distribution industry to supply the required fuel, and the impact on costs and supply. API recommended that EPA:

- Work with industry and the Department of Energy to conduct a comprehensive assessment of the impacts on not only diesel supply, but also heating oil, jet fuel, and other distillate supply, taking into consideration the *multitude of regulations facing the US refining industry* in the 2007 time period (gasoline sulfur reductions, potential off-road controls, air toxics, oxygenates, stationary source controls, etc.).

- Justify the reductions in emissions it has targeted on an incremental cost-effectiveness basis.

- Conduct an incremental cost-effectiveness comparison of the API proposal and the 15 ppm cap EPA reportedly will propose.

- Explain the basis for its belief that NOx absorber technology will be a viable technology for heavy duty applications in 2007, when well recognized automotive engineering experts believe otherwise.

- Explain why a 50 ppm sulfur cap is insufficient to enable PM trap technology, when this technology is functioning satisfactorily in Europe on 50 ppm sulfur diesel fuel.

- Explain what information the Agency has that assures it that 15 ppm diesel can be distributed and that supply disruptions will not occur.

API advocated a 90% reduction in diesel fuel sulfur content of both on-road and off-road diesel fuel when aftertreatment systems requiring these low sulfur levels are in the marketplace– but no sooner than 2007. For future on-road diesel fuel, API supported an average sulfur level of 30 ppm, with a 50 ppm cap. For future off-road diesel fuel, API supported a cap of 500 ppm. API urged EPA to analyze engine and aftertreatment technology based on these levels of sulfur and then define tailpipe standards that could be achieved for each viable fuel and technology combination. API also emphasized that changes in fuel properties should be compatible with the current fuel distribution systems. API emphasized the following points:

- EPA should regulate only the sulfur content in diesel fuel and the level should be based on heavy-duty diesel engine needs.
- Fuel sulfur should be reduced to the proposed average and cap levels in a single step, with no phase-in period.
- The existing two grades of diesel fuel in the distribution system (on-highway and off-road) should be maintained, with no requirement for a special, third grade of fuel.
- Vehicle certification and in-use compliance testing should be based on a standard reference fuel, which represents average fuel properties, including a 30 ppm sulfur level.
- EPA should consider the impacts of its decisions on both the on-road and off-road sectors.
- EPA should consider small entity impacts early in the process. Granting small entity sulfur exemptions later on will create an unlevel playing field and negate many of the environmental benefits from the program.

API provided the following rationale, citing its sources, for its proposed diesel sulfur standards and major arguments. DECSE[1] and MECA[2] research shows that 30 ppm average sulfur is well below the level needed to meet a 0.01 to 0.02 grams per brake horsepower hour particulate emissions standard. Other than SCR/urea, EPA's suggested NOx standard of 0.2 to 0.5 grams per brake horsepower hour has not been demonstrated to be achievable at any sulfur level (including near zero).[3] API argued that EPA can only consider a NOx standard with which both the vehicle and fuels industries can realistically comply.

API argued that parameters other than sulfur have not been shown to provide any meaningful emissions reductions in most recent technology engines[4,5]. The cost-effectiveness of any fuel modifications beyond sulfur reduction would be quite poor. API emphasized its opposition to a special, third grade of diesel fuel, arguing that EPA does not have authority to[6] require a third grade of severely reformulated diesel fuel for a light duty diesel market which, according to credible studies[7], may never develop. Also, the problems and costs associated with a volumetric phase-in of the 2007 on-highway diesel fuel would outweigh the

[1] Diesel Emission Control – Sulfur Effects (DECSE) Program, Phase I Interim Data, Report No. 1, August 1999, U.S. Department of Energy, Engine Manufacturers Association, Manufacturers of Emission Controls Association.

[2] Demonstration of Advanced Emission Control Technologies Enabling Diesel-Powered Heavy-Duty Engines to Achieve Low Emissions Levels, Final Report, Manufacturers of Emissions Control Association (MECA), June 1999.

[3] Evaluation of Future Diesel Engine Technologies Including Exhaust Gas Aftertreatment for the US Market, AVL List GmbH for American Petroleum Institute

[4] Future Diesel-Fueled Engine Emissions Control Technologies and Their Implications for Diesel Fuel Properties- A Review, Sierra Research, Inc. for American Petroleum Institute, August 18, 1999.

[5] Heavy-Duty Engine Working Group, Mobile Source Technical Advisory Subcommittee of the Clean Air Act Advisory Committee reports, "Phase I Final Report", April 1997, and "Phase 2 of the EPA HDEWG Program – Summary Document"

[6] Comments to the Environmental Protection Agency's Advanced Notice of Proposed Rulemaking (ANPRM) on Control of Diesel Fuel Quality (64 FR 26142, May 13, 1999), from the American Petroleum Institute, Legal Issues, July 13, 1999.

benefits. The costs and impacts of distributing such fuels with extreme sulfur reductions would be high, and could cause supply disruptions[8].

The API proposal also discussed certification and in-use compliance testing on average fuel. The proposed 30 ppm average/50 ppm cap is sufficient to protect the long term durability of aftertreatment devices that will be technically feasible and commercially viable in the post-2004 timeframe. EPA should allow engine manufacturers to certify on the 30 ppm average. The average fuel sulfur is what determines environmental benefit, and it provides engine manufacturers a basis for equipment design. For in-use testing, EPA should allow engine manufacturers to either conduct the testing on a 30 ppm fuel, or take into account the sulfur level of the fuel in the tank in determining emissions compliance. EPA allows 30-80 ppm sulfur certification for the recent gasoline sulfur rule, and 300 - 500 ppm for diesel sulfur. Allowing 30 ppm for the 2007 rule would be consistent with currently established practices[9].

API urged EPA to coordinate its regulation of diesel sulfur for on- and off-road controls. Fuel suppliers need to have a complete picture of their capital investment needs, and not be compromised by ill-timed regulatory actions that

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[8] US Light-duty Dieselization Study, Arthur D. Little, Inc. for the American Petroleum Institute
Costs/Impacts of Distributing Potential Ultra Low Sulfur Diesel, Turner, Mason and Company for the American Petroleum Institute

[9] EPA should also consider a non-sulfate PM standard. EPA is already addressing the sulfate issue by reducing sulfur to the 30 ppm average /50 ppm cap level. Given that a more stringent sulfur standard is being imposed on fuel, there may not be a need to also involve sulfur in the tailpipe measurement of particulate emissions. Also, given that sulfate as sulfuric acid is hygroscopic, and the fact that water is measured in the weight of PM emitted, measuring PM on a sulfate free basis may be justified.

are not logical or cost effective for investment planning and compliance purposes. Any refinery that makes both highway and non-road fuel (which is a majority of the refineries in the US) will not be able to begin engineering or construction for highway diesel fuel until they know how much sulfur must be removed from the entire diesel pool. API supported a 500 ppm cap for off-road diesel fuel when equipment requiring this sulfur level is in the marketplace, preferably to be simultaneously introduced with the 2007 on-highway fuel, but not before 2006.

The final point that API made was that changes in fuel properties should not occur before assurance that the new fuel is compatible with not only future engine system technologies but also with current engine system technology. Scenarios such that those that occurred in 1993 with the introduction of the lower sulfur diesel fuel into the market, and the experience of the federal reformulated gasoline program are situations that must be avoided.

Attachment II

Executive Summary – February 2000 Turner, Mason & Company report "Costs/Impacts of Distributing Potential Ultra Low Sulfur Diesel"

COSTS/IMPACTS OF

DISTRIBUTING POTENTIAL

ULTRA LOW SULFUR DIESEL

Prepared for the
American Petroleum Institute

Robert E. Cunningham
Thomas R. Hogan
Joseph A. Loftus
Charles L. Miller

February 2000

TURNER, MASON & COMPANY

EXECUTIVE SUMMARY

ULSD sulfur cap impacts

In our opinion, it probably will not be feasible for the distribution system to maintain continuously available supplies of 5 ppm sulfur ULSD in all areas. Spot outages would probably occur for up to a week or longer in some sparsely populated regions which are remote from source refineries; outages would occur due to off-specification product and subsequent delays in removing, downgrading and replacing it. The distribution system has no experience in handling a low volume ultra low specification product while handling a similar abutting product with a ratio of over 50:1 for the same property specification. Handling ULSD at a 5 ppm sulfur cap, along with off-road diesel/No. 2 fuel at a 5,000 ppm sulfur cap and kerosene jet fuel at a 3,000 ppm sulfur cap, would involve extreme property ratios of up to 1,000:1. If the ULSD sulfur cap were increased to 50 ppm, these ratios would drop to up to 100:1, flexibility to blend down off-specification product would increase, and continuously available supplies would probably be attainable.

added distribution costs estimates

The added distribution costs for ULSD over the typical distribution costs for the current LSD primarily depend on: 1) whether it is a third diesel/No. 2 fuel product; 2) the ULSD demand level; 3) the ULSD sulfur level; and 4) the number of refineries that produce it. In the 5% of LSD minimum demand case (125 thousand barrels per day [MBPD]) and in the 20% of LSD low demand case (500 MBPD), the ULSD is a third major diesel/No. 2 fuel product which contributes significantly to the added distribution costs. ULSD replaces LSD in the

100% of LSD maximum demand case (3,075 MBPD), so there would continue to be only two major diesel/No. 2 fuel products, which would minimize added distribution costs.

The table below summarizes the estimated added distribution costs for 5 ppm ULSD for the three demand levels.

	Added Distribution Cost Over LSD, ¢/Gal. of ULSD @ 5 ppm		
Demand Case	5%	20%	100%
Average	6.2	2.3	1.2
Range – Lower	1.8	0.9	0.6
– Upper	16.6	12.8	1.8

The estimated cost ranges are very wide at the two lower demand levels due to high transport costs to areas that are remote from probable producing refineries.

The average added ULSD distribution cost components for each demand scenario are summarized below:

	Average Added Distribution Cost Components ¢/Gal. of ULSD @ 5 ppm		
Demand Case	5%	20%	100%
Remote Area Transportation	2.5	0.5	0.1
Capital Charges	1.2	0.7	0.1
Added Trucking to Retail	1.0	0.4	0.0
Interface Downgrade	0.7	0.6	0.9
Off-Specification Downgrade	0.3	0.1	0.1
Added Marine vs. Pipeline	0.5	0.0	0.0
Total Distribution	6.2	2.3	1.2
Retail Capital Charge	0.8	1.8	0.3
Total Distribution and Retail	7.0	4.1	1.5

The estimated average added distribution costs for 50 ppm ULSD are 15-35% lower than those for 5 ppm ULSD. These estimated added distribution costs for 50 ppm ULSD are lower for each cost component summarized above except capital charges and trucking to retail.

The average added investment estimates are tabulated below:

	5 ppm ULSD Added Investment, MM$		
Demand Case	5%	20%	100%
Distribution	130	295	325
Retail	85	755	755
Total	215	1,050	1,080

The distribution investment and capital charge would be primarily due to terminal additions and secondarily to pipelines. The retail investment and capital charge would result from adding ULSD at some gasoline stations to provide adequate supplies for future light duty diesel vehicles, primarily in rural areas, small towns and along highways.

The added average distribution cost for the minimum demand case is about 6.2¢ per gallon primarily due to 5 ppm ULSD transport to remote areas. Added costs for movements to remote areas occur primarily in Petroleum Allocation for Defense District (PADD) IV, eastern PADD V and western PADD II because the minimum demand for ULSD probably will not support needed investments by pipelines to handle a third diesel product. Therefore, most of the ULSD will probably be

moved by more costly marine, truck or rail. This results in a very high transportation cost of up to 11¢ per gallon for some movements that will likely be made by truck.

The capital charge is based on a 10% rate of return and our assumptions that about 100 terminals (10% of them) will handle ULSD, and about 30 refineries will produce and terminal it. Each of these standalone and refinery terminals would probably invest an average of about $1 million to handle ULSD as a third diesel/No. 2 fuel product.

The added distribution cost over LSD in the low demand case drops to about 2.3¢ per gallon because the large pipelines would probably have enough incentive to make the investments to ship 5 ppm ULSD. Therefore, there is less need for much more costly and lengthy truck, marine or rail shipments of ULSD. Also, although the total distribution investment required probably increases to about $295 million (about $200 million for approximately 200 terminals handling ULSD, about $50 million for 50 refinery terminals at ULSD-producing refineries, and about $45 million for pipeline investments), the capital recovery charges drop to about 0.7¢ per gallon because the total demand increases fourfold.

The distribution costs in the maximum demand case will probably be closer to the current clean product distribution costs. The added distribution cost is primarily for the interface downgrade. This will be greater than the downgrade in the

minimum and low demand cases because the abutting product will probably be off-road diesel or No. 2 fuel with a maximum sulfur content of 5,000 ppm versus 5 ppm for ULSD.

Minimum ULSD demand will approximate the demand patterns for LSD diesel at gasoline service stations to fuel diesel automobiles, light trucks, vans and SUVs. The current demand to fuel this sector is approximately 5% of the LSD demand. This minimum ULSD demand at 5% of LSD could grow to the low demand level of about 20% of LSD if light duty vehicles with diesel engines become more widely used. We expect most of the ULSD demand at 5% and at 20% of LSD to follow the vehicle registration pattern for light duty trucks, vans and SUVs. For the maximum ULSD demand case at 100% of LSD, the ULSD demand pattern will become more like the current LSD demand pattern set by heavy duty trucks. It probably will be comprised of about 85% for heavy duty trucks and about 15% for light duty vehicles. ULSD demands by PADDs are shown in the following table for the three demand cases:

	ULSD Demand As % of LSD		
	5	20	100
PADD, MBPD			
I	38	152	750
II	38	152	995
III	18	73	670
IV	6	24	151
VOC	10	38	171
VC	15	61	338
Total	125	500	3,075

Initially, most of the 5 ppm ULSD will likely be produced in about 25 U.S. refineries with two-stage, high conversion hydrocrackers. These units will probably be able to make up to about 30% of their feed capacity as ULSD with a very low sulfur level. These refineries could produce about 200 MBPD of ULSD, or about 8% of the current LSD demand. Due to remote demand locations and very high distribution costs, we believe about five other refineries will probably make ULSD by adding severe hydrodesulfurization (HDS) facilities at the minimum demand level of 5% of the LSD. If demand increases to 20% of the LSD demand, probably up to about 20 other conversion refineries will invest in severe HDS to produce ULSD. If the ULSD sulfur maximum were raised to 50 ppm, the existing U.S. hydrocracking capacity would probably be able to produce up to about 500 MBPD (20% of LSD demand), and most of the need for significant refining investment would be delayed. If ULSD were required to replace all LSD, significant refinery investment would be required for severe HDS capacity, probably even more than the MathPro study indicates. We believe some of the smaller refineries with crude distillation capacity of less than 50 MBPD probably would not make ULSD because they could not justify the added HDS investment with their diseconomies of scale.

In all cases, some ULSD imports would probably come from Canada into PADDs I and II. In the maximum ULSD demand case, imports would probably come from the Caribbean as well. We estimate the following inter-PADD transfers and

imports of ULSD:

	ULSD Demand As % of LSD		
	5	20	100
Inter-PADD Transfers, MBPD			
I to II	-	-	62
II to IV	-	11	75
III to I	30	117	365
III to II	5	56	212
III to IV	4	12	3
III to V	-	-	59
V to IV	1	-	-
Total	40	196	776
Imports, MBPD			
To PADD I	8	17	250
To PADD II	2	3	-
Total	10	20	250

We believe that availability of ULSD in the urban markets could be provided by switching the pumpers and gasoline stations with small diesel facilities (about 12% of total gasoline retailers) from LSD to ULSD. However, at the minimum demand level, it may be more costly and difficult to supply ULSD in the rural areas and small towns, which do not have these types of outlets. Most of the truck stops and other retailers that sell diesel carry only one grade, and LSD will remain their product of choice at low and minimum ULSD demands. Some of these large retailers carry two diesel grades and could convert their smaller volume premium diesel to ULSD. Probably about 1% of gasoline stations would need to add ULSD to provide adequate availability of supplies. This would result in the average retail capital charge of about 0.8¢ per gallon shown

above.

At the low demand level (500 MBPD), more gasoline retailers which have a separate midgrade tank may be able to justify converting their midgrade gasoline tank to ULSD, converting their midgrade pumps to blending pumps and adding ULSD pumps. This will increase availability in the rural, small town and minor highway markets and result in an incremental ULSD service station capital charge of about 4.6¢ per gallon. The average ULSD retail capital charge based on about 8% of gasoline stations converting to ULSD would be about 1.8¢ per gallon.

We conducted surveys of selected refiners, pipeline operators, terminal operators and retail associations to seek their input on the issues related to distributing ULSD. Fourteen refiners with about 38% of the U.S. crude distillation capacity, three pipelines with combined shipping capacity of just under 3 million barrels per day (MMBPD) and 11 terminal operators representing about 20% of U.S. terminals combined tankage capacity responded to the surveys. Only two retail associations responded to the survey, and therefore, no results are included in this report to protect the confidentiality of the respondents.

Survey highlights include:

- Essentially all of the distribution facilities surveyed expect added investment when ULSD is a third major diesel/No. 2

fuel product.

- Areas for investment were primarily additional tankage, truck loading, pipeline and marine facilities. There was almost no indication that added investment would be required for rail facilities.

- Pipeline investment required to handle ULSD was estimated by the pipeline respondents to be $1-10 million per pipeline.

- On average, the pipelines would set the maximum sulfur specification of shipment tenders received for a 5 ppm sulfur ULSD at less than 2 ppm.

- Pipeline respondents estimated the weighted average minimum batch size for refinery tenders to be about 50 MB.

Attachment III

Press Releases of Various Concerned Organizations

NEWS

American Petroleum Institute

For Immediate Release

News media contact:
Susan L. Hahn 202/682-8118
E-mail: hahns@api.org

API Statement on Reducing Diesel Fuel Sulfur Levels

WASHINGTON, May 17 — The American Petroleum Institute said today it supports sharp reductions in diesel sulfur content, but strongly opposes the U.S. Environmental Protection Agency's unrealistic proposal for on-highway diesel fuel controls.

"The petroleum industry has demonstrated its strong commitment to cleaner air and lower diesel emissions by calling for an unprecedented 90 percent reduction in diesel sulfur levels," said API President Red Cavaney. "The petroleum refining industry's proposed level of reduction strikes the right balance between our nation's need for cleaner air and consumers' needs for a reliable, affordable supply of energy."

The extreme reduction called for by EPA, to 15 parts per million (ppm) by 2006, has been proposed without consideration of its potential to seriously affect supplies, adversely affect U.S. consumers and harm the U.S. economy," Cavaney said.

The proposal does not account for some predictable adverse consequences, Cavaney said. For example, nearly 70 percent of the nation's diesel fuel is transported by pipeline, as are other products refined from crude oil. Yet pipeline companies have said it is impossible to ship the ultra-low sulfur fuel proposed through the nation's pipelines without picking up additional levels of sulfur from other fuels shipped through those pipelines. That fuel would then not meet the regulatory specifications of a 15 ppm sulfur level for on-highway diesel and could not be used in trucks, potentially reducing supply.

Representatives of the nation's truck stop operators have said they do not generally have the additional storage capacity nor financial capital to install the extra underground fuel storage tanks that would be needed under EPA's potential phase-in schemes. Such a phase-in would create two grades of on-highway diesel requiring two separate storage tanks. This requirement would follow a recently completed, costly, decade-long underground tank upgrade and replacement program required by EPA regulations. Others that have expressed serious concerns about EPA's proposal include the American Trucking Associations, gasoline distributors and marketers, and more than 20 farm and agribusiness organizations representing 1.8 million farm families and 4,000 local agricultural cooperatives throughout the U.S.

"We want to continue working with the Agency to develop a plan that is effective, workable and consistent with the energy needs of the nations' consumers and transportation industry," Cavaney said.

May 17, 2000 slh (F)

NATIONAL COUNCIL OF FARMER COOPERATIVES

For Immediate Release
May 17, 2000

Contact: Pamela Valenzuela or Tom Van Arsdall
202-626-8700

NCFC Concerned that EPA Sulfur Diesel Proposal Could Jeopardize Farmer-Owned Petroleum System

Washington, DC— David Graves, National Council of Farmer Cooperatives (NCFC) president and CEO, expressed deep concern that the Environmental Protection Agency's (EPA) proposed sulfur diesel rule being released today will move too far too fast if it includes a standard significantly below 50 ppm.

"We have been working with EPA, and we appreciate the agency's recognition of the unique structure and challenges of farmer-owned cooperative refiners, as well as compliance flexibility proposals we understand may be in the proposed rule," Graves stated. "However, we remain concerned that an overly stringent sulfur diesel standard could unnecessarily harm U.S. agriculture and rural America, particularly during a time of continuing economic hardship that threatens the survival of many farmers and ranchers," Graves warned.

The co-op leader pointed out that farm and other off-road uses will be impacted by the new highway standard since most of the distribution system can handle only one grade of diesel fuel.

NCFC is urging that a final rule (1) establish an on-road sulfur diesel fuel cap of about 50 ppm, a 90 percent reduction from the current level, and (2) provide maximum compliance flexibility.

An ultra-low standard could lead to unintended harm to American agriculture and rural America by jeopardizing the economic viability of farmer-owned cooperative refiners and creating conditions for fuel supply disruptions and excessively higher prices for farmers, for both on-farm and highway fuels. Graves distributed copies of a May 9 letter to EPA Administrator Carol Browner which was signed by 24 agricultural organizations that expressed similar concerns.

"We look forward to working with the agency to achieve a final rule that is compatible with continued economic viability in American agriculture and environmental progress. Just as our constituents need and want cleaner air, they also require reliable and affordable fuel supplies," Graves concluded.

-more-

NCFC Concerned Over EPA Sulfur Diesel Proposal
2-2-2-2-2-2-2

American agriculture is vitally dependent in carrying out its food, natural fiber, renewable energy and other missions upon a reliable and affordable supply of diesel fuel. Though less than 2 percent of the refining industry, farmer cooperatives account for about 40 percent of all the on-farm fuel use in the United States and are unique in that the customer is also the owner. Farmer cooperatives also supply much of the highway diesel and home heating oil needs in rural America.

An ultra-low sulfur diesel standard could (1) increase the threat of supply disruptions, particularly in rural America, by effectively reducing refinery capacity; (2) force many refiners to produce more costly ultra-low sulfur diesel fuel for farm and other off-highway uses due to distribution limitations, particularly in the agricultural heartland; and (3) jeopardize the economic viability of farmer-owned refineries. Costs for farmers and other rural consumers could range from a 5 cents per gallon increase if sulfur levels are set at 50 ppm to 10 cents or more at 15 ppm. Supply disruptions would cause much larger price spikes.

NCFC is a nationwide association of cooperative businesses owned and controlled by farmers. Its membership includes more than 100 major farmer marketing, supply, and credit cooperatives, and state councils of cooperatives. NCFC members, in turn, represent nearly 3,500 local cooperatives with a combined membership that includes most of the nearly two million U.S. farmers. NCFC members handle almost every type of agricultural commodity produced in the United States, market these commodities domestically and abroad, and furnish production supplies and credit to their farmer members.

Additional information about NCFC can be found at www.ncfc.org.

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PETROLEUM MARKETERS ASSOCIATION OF AMERICA
NEWS RELEASE

Contact
John Huber
703-351-8000

PMAA would like to congratulate EPA in its efforts to improve diesel quality and reduce emissions from trucks. The petroleum industry has sought and encouraged such improvements, and knows that the American public will welcome these improvements. PMAA's 7,850 members distribute most of the diesel fuel in America and has encouraged EPA to improve diesel fuel.

However, we are deeply concerned with the proposal that EPA will be releasing. EPA is proposing an extremely low sulfur content for diesel fuel and is also considering a phase in of the new fuel.

Estimates have circulated that the ultra low sulfur fuel may cost as much as 10 cents a gallon to manufacture, additional costs of segregation and distribution may drive the costs to truckers even higher. PMAA is concerned that many refiners will not make the necessary investments to service the diesel market and will instead export their diesel or direct their diesel fuel to the heating oil market. If that occurs, there may be spot and perhaps extended shortages of diesel fuel throughout the country which could create price instability and very high prices.

Additionally, there is consideration of a phase in of this new fuel. Such a phase in would be equivalent to converting trucks in 2007 to alternative fueled vehicles, with the hope that the fueling infrastructure will materialize.

PMAA believes that both the ultra low sulfur fuel and the phase in essentially will establish a time bomb within the program set for detonation in 2006. Instead of improved emissions, the American public will either have escalating prices for diesel fuel, which will increase prices for all consumer goods in America, or the program will be a failure and the American public will not receive any benefits from the program.

Given the high fuel prices today, and the fuel problems of this last winter, PMAA would encourage EPA to make meaningful steps toward cleaning the air. First, they should reduce sulfur in diesel by 90 percent, which will allow diesel engines to be improved significantly. Second, they should use the existing infrastructure for distributing the fuel, to ensure that the new trucks will have an available fuel supply system.

Press Release

For Immediate Release Contact: Jeff Lenard
(703) 684-3600, ext. 372
jlenard@cstorecentral.com

May 17, 2000

Proposed Diesel Fuel Controls Unreasonable, According to NACS

ALEXANDRIA, VA--Steps to significantly reduce diesel sulfur content can, and should be undertaken, but the levels proposed by the U.S. Environmental Protection Agency (EPA) could causes considerable supply problems, according to the National Association of Convenience Stores (NACS).

EPA has proposed a 90 percent reduction in diesel sulfur levels to 15 parts per million (ppm) by 2006.

"The proposed cap and timeframe are in excess of what is feasible or advisable from both an energy-supply and an environmental-protection standpoint," said Gus Olympidis, NACS' vice chairman of government relations and president and CEO of Family Express Corp. Convenience stores sell approximately 60 percent of the motor fuels purchased in the country.

"The sulfur levels proposed by EPA would harm refiners, marketers, and consumers," Olympidis said.

"NACS has consistently opposed the draft EPA diesel sulfur proposal. Reductions of that magnitude could easily lead to future shortages of diesel fuel, disruptions in supplies of gasoline and other fuels, and highly volatile prices for all petroleum products if some refiners fail to meet the deadline for refinery modifications," Olympidis said.

EPA's proposed phase-in period also has the potential to significantly impact supplies and prices. "NACS also has strongly opposed a proposal to permit two grades of on-road diesel fuel during this phase-in period; such a system would disrupt the motor fuel distribution system and lead to substantially higher prices for on-road diesel fuel," Olympidis added.

In addition, NACS has stated that the marginal cost of cutting sulfur further to 15 ppm will be extremely high-a cost that will likely be passed on to consumers-while the marginal benefits are likely to be minimal.

"EPA has not released sufficient information on technical studies to demonstrate that the benefits would justify the added costs," Olympidis said. "NACS will continue to oppose this proposed rule as drafted and will file comments and submit oral testimony at the public hearings on the proposed rule."

The National Association of Convenience Stores (NACS) is an international trade association representing over 2,300 retail and 1,700 supplier members. Retail member companies operate over 79,500 convenience stores worldwide. The U.S. convenience store industry posted $164 billion in total sales for 1998. Celebrating 39 years of industry service, NACS continues to be an integral part of the convenience store industry success story through its annual convention & trade show, and education, information and public affairs programs. Additional information regarding NACS, and the convenience store and petroleum marketing industry, can be accessed at *C-Store Central*, the industry Web site owned and operated by NACS, at www.cstorecentral.com.

NEWS FROM NATSO

For release: ***** Contact: Jason Lynn (202) 554-2512

New EPA Diesel Sulfur Proposal Could Disrupt Fuel Supply Says Travel Plaza/Truckstop Industry

Alexandria, VA, May 17, 2000 – A proposal released today by the Environmental Protection Agency to dramatically reduce the sulfur content in diesel fuel goes too far, too fast, says NATSO, the association representing the nation's travel plaza and truckstop industry.

"EPA's diesel sulfur proposal could seriously disrupt our nation's diesel fuel supply and delivery system," said NATSO President W. Dewey Clower. "Under this ill-conceived proposal, diesel fuel producers, distributors, and retailers may not be able to deliver an adequate supply of diesel fuel to consumers," Clower continued.

While the petroleum industry supports a 90 percent reduction in diesel sulfur levels, EPA's proposal would reduce the sulfur content of diesel fuel from 500 parts per million to just 15 parts per million in 2006. Despite calling for such a dramatic cut, EPA has failed to provide any compelling technical justification to support its proposal.

Furthermore, EPA's proposal could result in a phase-in of the new ultra low sulfur fuel, requiring retailers to carry two different grades of highway diesel fuel. This phase-in would exacerbate supply and price volatility, and prove potentially devastating financially for travel plaza and truckstop operators who do not have the means to deliver two grades of highway diesel.

"Travel plazas and truckstops are designed to handle a single grade of highway diesel fuel," stated Clower. "Risky phase-in schemes which would result in two different grades of highway diesel would be extremely costly and overly burdensome for our industry." These separate fuels would need to be segregated to prevent their cross-contamination. This would require new and separate storage tanks, as well as a complete and extremely costly conversion of the fueling infrastructure employed at travel plazas and truckstops nationwide.

"We support reasonable reductions in the sulfur content of diesel fuel, and stand ready to continue to work with EPA to ensure that the environmental progress we have made continues, without jeopardizing our nation's energy supply and delivery system," Clower said.

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NATSO, Inc. is the professional and legislative representative of America's $42 billion travel plaza and truckstop industry. The association was founded in 1960, and today acts as the voice of the industry in Washington on legislative and regulatory matters; conducts an annual convention and exposition attended by more than 2,000 industry leaders; and supports efforts to generally improve the business climate in which its member businesses operate.

NATIONAL PETROCHEMICAL & REFINERS ASSOCIATION

NEWS

1899 L Street, NW ◆ Suite 1000 ◆ Washington, DC 20036

FOR IMMEDIATE RELEASE

Contact Julie Rosenbaum (202) 457-0480
or Julie_Rosenbaum@npradc.org

EPA'S DIESEL SULFUR PROPOSAL HAS ADVERSE SUPPLY IMPLICATIONS

WASHINGTON, DC, May 17, 2000 - The National Petrochemical & Refiners Association (NPRA), which represents virtually all U.S. refiners, today expressed deep concern about the impact of EPA's new diesel sulfur proposal on future supplies of highway diesel fuel. "This extreme proposal is a blueprint for future supply problems. It will reduce the supply of highway diesel, America's premium commercial fuel, because many refiners will be unable to bear the heavy costs of reducing sulfur to the unrealistic level chosen by EPA. Supplies of home heating oil and gasoline will also be affected if and when refineries close or reduce capacity because of the crushing investment burden," said NPRA President Urvan Sternfels.

"EPA has issued a proposal which is little more than an exercise in wishful thinking. It sets a nationwide standard that the refining industry cannot meet, for a new product that the fuel distribution system cannot provide, at a cost that American consumers cannot afford, creating a burden that the U.S. economy cannot sustain," Sternfels added.

In contrast, NPRA supports a 90% reduction in highway diesel sulfur levels from the current 500 parts per million cap to a new cap of 50 parts per million. This is still a significant reduction, with which most refineries will be able to comply by making capital investments to upgrade existing facilities or to build new capacity. Unlike the EPA plan, in which costs are likely to result in refinery closures and the loss of refining capacity, the industry's proposal would moderate the rule's impact on both U.S. petroleum refining capacity and supplies of highway diesel.

The exact investment requirements of EPA's proposed rule have not been calculated, but they are immense, certainly several billion dollars. Meanwhile, the refining industry is already implementing an $8 billion (6-7 cents per gallon) program to reduce sulfur in gasoline in the same timeframe. There are few synergies in the gasoline and diesel sulfur reduction strategies so there is no justification for doing both concurrently. "Unfortunately, EPA has turned a deaf ear to repeated industry warnings that uncoordinated environmental programs will lead to frequent market disruptions which affect all petroleum products, especially diesel and gasoline. NPRA will continue to voice its concerns in every forum available," Sternfels concluded.

Joint Statement
On EPA's Proposed Diesel Sulfur Regulation
May 17, 2000

Organizations representing diesel fuel manufacturers, distributors, retailers and users offer the following comments today on EPA's proposal for reducing sulfur content in diesel fuel:

"We are deeply concerned that EPA's proposal will seriously harm consumers of diesel fuel and ultimately the nation's economy. The agency's proposal will be extremely costly and could limit essential fuel supplies to farmers, truckers and other users of diesel fuel.

"Some fuel producers may be unable to maintain diesel production levels—or may go out of business. Distributors may find it impossible to employ the existing fuel transportation system because of problems with mixing fuels with higher sulfur levels. And many retailers may be unable to invest the huge sums that could be necessary to convert their facilities to handle two highway diesel fuels meeting different specifications.

"EPA has gone too far, too fast, with insufficient technical justification. A more reasonable sulfur rule could contribute to substantial improvements in air quality at much lower cost and at the same time ensure that the nation gets the diesel supplies it needs to help drive American commerce. We are committed to obtaining a better program for diesel sulfur reduction than that which EPA has put forward."

American Petroleum Institute
Buckeye Pipeline
Colonial Pipeline
CENEX Harvest States
Independent Fuel Terminal Operators' Association
National Association of Convenience Stores
National Association of Truck Stop Operators
National Council of Farmer Cooperatives
National Petrochemical & Refiners Association
Petroleum Marketers Association of America
Service Station Dealers of America and Allied Trades
Society of Independent Gasoline Marketers of America

Attachment IV

May 8, 2000 Agricultural Organizations Letter to the U.S. Department of Energy

May 8, 2000

The Honorable Bill Richardson
Secretary
Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

Dear Secretary Richardson:

The undersigned agricultural organizations are deeply concerned that the Environmental Protection Agency's (EPA) proposal to reduce the sulfur levels in diesel fuel could have adverse unintended consequences for American agriculture and rural America. These could come in the form of fuel supply disruptions and excessively higher prices for farmers, for both on-farm and highway fuels, if the proposed rule is implemented as currently drafted.

The EPA draft proposal could (1) increase the threat of supply disruptions, particularly in rural America, by effectively reducing refinery capacity; (2) force many refiners to produce more costly ultra-low sulfur diesel fuel for farm and other off-highway uses due to distribution limitations, particularly in the agricultural heartland; and (3) jeopardize the economic viability of farmer-owned refineries, leading to further concentration in the petroleum industry serving rural America. Costs for farmers and other rural consumers could range from a 5 cents per gallon increase if sulfur levels are set at 50 parts per million (ppm) to 10 cents or more at 15 ppm.

In order to mitigate these potential problems, we strongly urge the agency to (1) set an onroad diesel fuel sulfur cap of about 50 ppm, which would be a 90 percent reduction from the current level; (2) delay and phase in any implementation of a diesel rule until the final gasoline rule has been implemented; and (3) maintain a higher off-highway diesel fuel standard in order to minimize costs to farmers and provide refiners with maximum flexibility to produce diesel fuel.

We support the Administration's clean air accomplishments, but we are concerned that an overly stringent diesel sulfur proposal could unnecessarily harm U.S. agriculture and rural America, particularly during a time of continuing economic hardship that threatens the survival of many farmers and ranchers.

We look forward to working with the Agency to achieve a final rule that is compatible with continued economic viability in American agriculture and environmental progress. Just as our constituents need and want cleaner air, they also require reliable and affordable fuel supplies. We are available to meet with you at any time on this important matter.

Sincerely,

Agricultural Retailers Association
American Crop Protection Association
American Farm Bureau Federation
American Feed Industry Association
Cenex Harvest States Cooperatives
Country Energy, LLC
Farmland Industries, Inc.
GROWMARK, Inc.
National Association of Wheat Growers
National Corn Growers Association
National Council of Farmer Cooperatives
National Grain and Feed Association
National Grange
North American Equipment Dealers Association
Pacific Northwest Grain and Feed Association
Society of American Florists
Southern States Cooperative, Inc.
The Fertilizer Institute
U.S. Custom Harvesters, Inc.

Cc: The Honorable Dan Glickman
The Honorable Robert Perciasepe
The Honorable Jacob Joseph Lew
John T. Spotila, Administrator, OMB, OIRA

Attachment V

Concerned Group's May 8, 2000 Presentation to U.S. Department of Energy

Concerns on Diesel Fuel Sulfur Controls

May 8, 2000

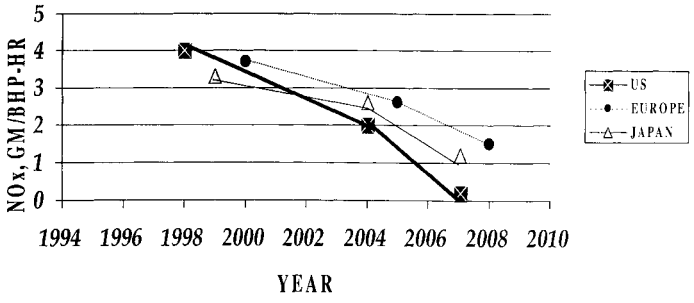
American Petroleum Institute
American Trucking Associations
Buckeye Pipeline
Colonial Pipeline
National Association of Truck Stop Operators
National Council of Farmer Cooperatives
National Petrochemical and Refiners Association
Petroleum Marketers Association of America
Society of Independent Gasoline Marketers of America

Industry and its Customers Position on Diesel Sulfur Controls

- EPA should not propose a regulation that puts the nation's energy supply at risk
- Refiners and a number of their customers strongly support a 90% reduction in highway diesel fuel sulfur
- Fuel and engine emissions standards must be based on sound science and cost-effectiveness
- Refining industry cannot supply 15 ppm sulfur diesel
- Distribution of ultra low sulfur fuels probably not feasible
- Phasing in, i.e. 2nd grade, voluntary or not, will not work
- Trucking industry, farmers and other users must be assured of consistent fuel supply

EPA ARBITRARILY SELECTED A 0.2 GM/BHP-HR NOx STANDARD

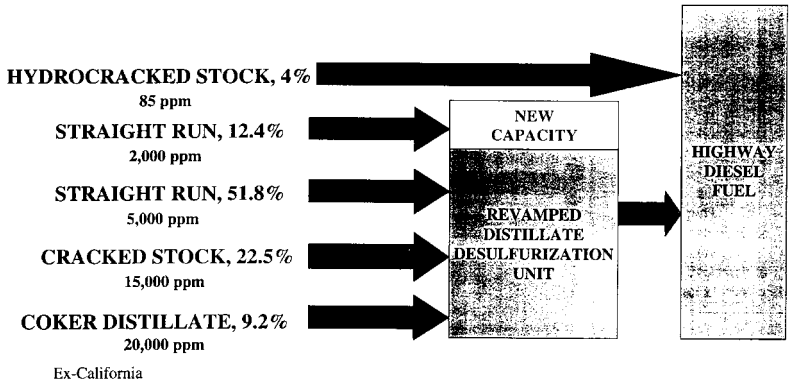
HEAVY DUTY DIESEL ENGINE STANDARDS
NOX



Refiners Support Feasible, Cost-Effective Reductions in Diesel Fuel Sulfur

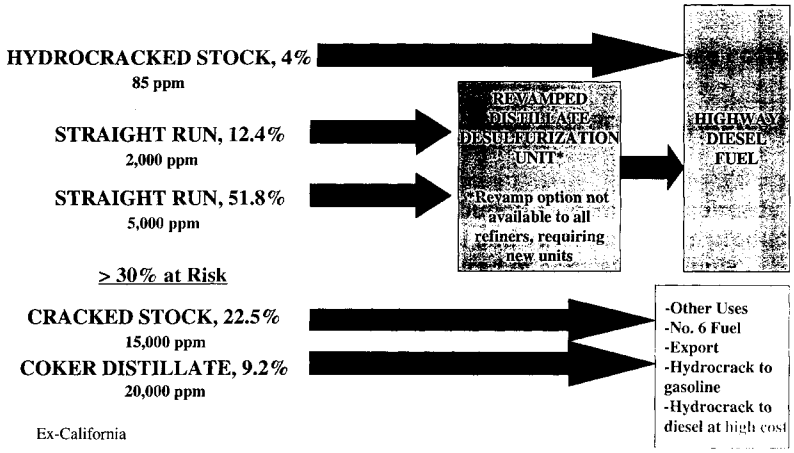
- Refiners strongly support a 90% reduction in highway diesel sulfur (from 500 ppm cap to 50 ppm cap and 30 ppm average) [NPRA has not endorsed the 30 ppm avg].
- Substantial PM and NOx reductions can be achieved with a 50 ppm cap/30 ppm average
- Cost of industry's proposal: ~6 cents/gallon, and ~$4 to $5 billion in refinery capital expenditures
- Cost of expected EPA proposal: 2-3 times the above assuming demand is met
- Would put the refining industry at great risk
- Could result in 20-30% reduction in production
- Overlapping implementation of gasoline sulfur and diesel sulfur requirements makes permitting, engineering and construction for both highly infeasible

How 50 ppm Diesel Will Be Produced



Ex-California

How 15 ppm Diesel Might Be Produced (by Those with Capacity)



EPA Should Not Propose a Regulation That Puts the Nation's Energy Supply at Risk

- **Recommend that government and industry work to:**
  - **Achieve reasonable cost-effective reductions in on-road diesel equipment.**
  - **Achieve fuels and emissions standards with which both the fuels and engine industries can realistically comply.**
  - **Maintain the right balance between environmental goals and energy supply.**
- **We request that DOE ask EPA not to issue a proposal unless and until DOE and the Department of Commerce first complete a production/supply/distribution/cost study.**

STATEMENT OF CURT EISCHENS, ON BEHALF OF THE NATIONAL COUNCIL OF FARMERS COOPERATIVES

INTRODUCTION

Good morning, Mr. Chairman, my name is Curt Eischens, and I am a fourth generation farmer from Minneota, Minnesota.

I am here today as a representative of the National Council of Farmer Cooperatives (NCFC) to speak to you about EPA's proposed rule to reduce the sulfur levels

in on-road diesel fuel. But more importantly, I will speak as (1) a director of a regional co-op, Cenex Harvest States Cooperatives; (2) a member of a local co-op; and (3) a family farmer and citizen of rural America.

American agriculture is vitally dependent upon a reliable and affordable supply of diesel fuel in carrying out its food, natural fiber, renewable energy, conservation and other missions. Through their cooperatives, farmers have invested heavily in a petroleum refining and distribution system to help assure a reliable and affordable supply of this vital input. Though less than 2 percent of the petroleum refining industry, farmer cooperatives account for about 40 percent of all the on-farm fuel use in the United States and are unique in that the customer is also the owner. Farmer cooperatives also supply much of the highway diesel and home heating oil needs in rural America.

First, let me say that farmer cooperative representatives have been working with EPA, and we appreciate the agency's recognition of the unique structure and challenges of farmer-owned cooperative refiners, as well as possible compliance flexibility options identified in the proposed rule. However, we remain deeply concerned that the proposed sulfur diesel standard is overly stringent and could have adverse unintended consequences for American agriculture and rural America, particularly during a time of continuing economic hardship that threatens the survival of many farmers and ranchers.

EXECUTIVE SUMMARY

If implemented as currently drafted, the EPA proposal could: (1) increase the threat of supply disruptions, particularly in rural America, by effectively reducing diesel production capacity; (2) force cooperative and other refiners to produce more costly ultra-low sulfur diesel fuel for farm and other off-highway uses due to distribution limitations, especially in the agricultural heartland; (3) jeopardize the economic viability of farmer-owned refineries, leading to further concentration in the petroleum industry serving rural America; and (4) impose major costs on farmers directly, with no return on investment, and take away scarce resources desperately needed for investments in projects to improve farm income. Diesel fuel costs for farmers and other rural consumers could be 10 cents or more at 15 ppm, with much higher price spikes in the event of supply disruptions.

It is important to understand that even though the EPA proposal is for on-highway diesel, the rule will also adversely impact farm and other off-highway uses of diesel fuel. It has been our experience that much of the petroleum storage system, particularly in the rural markets served by our cooperatives, is generally capable of handling only one grade of diesel fuel. This was certainly the case when the existing 500 ppm standard for highway diesel was implemented. Thus, our farmer-owned refineries will be forced to go to the ultra-low standard even though much of our market is for farm uses.

We are deeply concerned about several key elements of EPA's proposed rule. For example, we have great concerns about going lower than a 50 ppm cap. We believe a level as low as 15 ppm at the pump puts diesel fuel supplies at risk, particularly in rural America. We know that any phase-in with a fuel requirement for two on-road diesels would be extremely costly.

For these reasons, we strongly urge that the rule be withdrawn until serious unresolved issues can be addressed. We further recommend that any final rule should include the following: (1) set an on-road diesel fuel sulfur cap of about 50 ppm, which would be a 90 percent reduction from the current level; (2) provide refiners maximum flexibility to meet the new standards, including the ability to choose which fuel standard to meet first, by 2010—the new gasoline rule or any on-road diesel rule; and (3) not require a phase-in or two low sulfur diesel fuels.

FARMER COOPERATIVE SYSTEM

But before I address these concerns and recommendations more specifically, I believe it is important that you understand and appreciate the farmer cooperative system from the bottom up, so you can better understand the adverse impacts this rule could have on agriculture and rural America. There are approximately 1.8 million farm families in the United States today. There are over 3,500 farmer-owned local co-ops, and many of these locals belong to larger regional co-ops such as mine—Cenex Harvest States Cooperatives. At the national level, we are represented by the National Council of Farmer Cooperatives.

In rural America, bulk fuel terminals and service stations are often many miles apart. These 3,500 local co-ops sell farmers all the inputs necessary for their production needs, including fuels for powering their equipment and vehicles, drying their crops, heating their livestock enclosures, and heating their homes. Many of these

local co-ops depend heavily on petroleum sales to farmers for the majority of their sales income and their livelihood. To properly supply farmers, local co-ops maintain fuel tanks and pumps, and in turn, farmers maintain their own fuel tanks on their farms.

Adequate and affordable fuel supplies have always been very important to agriculture and rural America. Because of the special needs of agriculture and problems with relying on existing petroleum refiners, farmers in the early 1900's chose to pool their resources and invest in refineries. In 1979, there were eight refiner co-ops. Today there are only four refiner co-ops that supply much of the needs of Midwest farmers. They are (1) Cenex Harvest States Cooperatives' refinery in Laurel, Montana; (2) Farmland Industries' refinery in Coffeyville, Kansas; (3) the National Cooperative Refiners Association in McPherson, Kansas; and (4) Countrymark Cooperative's refinery in Mt. Vernon, Indiana. These cooperatives are owned by approximately one million farm families—over half of all the farmers in the United States—in some 28 States.

My regional cooperative, on which I am an elected Board Director, is Cenex Harvest States. We are headquartered in St. Paul, Minnesota and are comprised of over 1,000 local co-ops, in 18 States. We are owned by over 325,000 farmers, or nearly 20 percent of all farmers in the United States.

CONCERNS

Why am I as a farmer and cooperative leader concerned about the proposed rule?

First, As a representative of NCFC, I stress the need to consider all of agriculture, not just the four farmer-owned cooperative refineries. Agriculture is the backbone of the United States economy from the "Back 40 on the farm to Aisle 40 in the grocery store" and contributes approximately 16 percent of the Gross National Product. In performing this vital role, we are heavily dependent upon diesel fuel. We believe EPA is moving "too far, too fast," with a rule that will directly cost the farmer money, with no return on investment and taking away scarce resources desperately needed for investments in projects to improve farm income. I have a letter for the record to EPA Administrator Browner with signatures of nearly 30 organizations representing all aspects of agriculture. The letter raises serious concerns about EPA's proposal.

Second, As an elected Director of Cenex Harvest States Cooperatives and one who will have to vote to approve spending farmers' money to make these expenditures, I have to look at the costs of this rule. We own refineries, pipelines, terminals, tankage, truck stops, local town convenience stores, and fuel delivery trucks—all will be adversely affected by the rule.

For example, the rule will directly affect our refineries. How will we finance the capital expenditures? There are many air quality rules going into effect in the near future with which we will have to comply as well, such as—ozone, $PM_{2.5}$, regional haze, maximum achievable control technology, new gasoline specifications by 2003, and now, proposed on-road diesel fuel specifications by 2006. We also expect new EPA rules on off-road diesel fuel and green house gas emissions in the near future. These rules have a costly cumulative effect. How will we pay for them all? It will be extremely difficult at best.

Co-ops do not have the same access to equity markets as other businesses. For example, unlike our competitors, we cannot issue stock to raise capital. We cannot turn inward to our member owners for funds—our current farmer-owners do not have the money. Over the past 3 years, Congress has had to approve about $20 billion in emergency funding to help farmers survive hard economic times. Our owners are farmers, many of whom have limited means.

Third, As a member of a local cooperative, it is even more challenging. We'll have to address many of the same issues as our regional co-ops, but with even less flexibility. Consider EPA's phase-in and two diesel fuel proposals. Regional co-ops will be of little help to local co-ops because they are extremely stretched for cash and have little working capital. The co-op system is heavily dependent on and limited by fuel tankage. If a dual low sulfur diesel system is mandated, how would we pay for the additional tanks and pumps? The answer is—most of these local co-ops and Mom and Pop convenience stores cannot. We will be forced to decide which diesel fuel to carry and therefore lose those customers that need the other type of diesel.

What happens if EPA requires a phase-in? Again who pays? Farmers, local co-ops, small town fueling stations, co-op terminals and the regional co-ops will pay. Why? Because many of us will have to put in additional fuel tanks for only a few years. There are 1.8 million farmers, 3,500 local co-ops and 1,500 farmer-owned convenience stores and fuel pumps in rural America that might have to comply with

increased tank and pump requirements for a 4-to 5-year phase-in. This is certainly not cost-effective for American agriculture.

Fourth, I speak as a farmer, especially on behalf of my farm family. If our recommendations are not adopted, my farm family will be heavily penalized. How? First, who will pay for these hundreds of millions of dollars of upgrades? Well, farmers will have to pay through reduced patronage. I will lose patronage because my regional co-op will have to finance the refinery upgrades, thereby reducing any returns normally distributed from the regional co-op back to the local co-ops and on to farmers. I will lose patronage from my local cooperative if the local co-op has to pay for increased tankage or loses sales. Second, to whom will these additional fuel costs for ultra-low sulfur fuel be passed, at rates estimated to be from 10 to 15 cents a gallon? The answer again is to farmers.

Our livelihood depends on the success of our farm and the viability of our rural community. Local co-ops are an important part of these rural communities. We are very concerned about the environment. We believe in clean water and clean air and think a 90 percent reduction in diesel sulfur levels goes a long way in achieving clean air goals. What EPA is proposing—a 97 percent reduction—goes too far, particularly for rural parts of the country that do not have these clean air problems.

RECOMMENDATIONS

What can be done to help the farmer cooperative petroleum system and farm families?

CONGRESS can help the farm family and U.S. agriculture by urging that the proposed rule be withdrawn and reconsidered. Now that everyone has recently become aware that the on-road diesel rule can have major agricultural impacts, and is not just a refiner issue, Congress should direct EPA to *retook* the proposed rule's impacts on agriculture and rural America through the Small Business Regulatory Enforcement Relief Act process. It is important to understand the impacts on farmers and local co-ops as small businesses. Congress can also require for proposed new diesel sulfur specifications what it did for unleaded gasoline in 1985.

What happened in 1985? Uncertain about the impact of reducing lead in gasoline, Congress passed legislation directing EPA and USDA to conduct a 2-year study and joint report. The relevant section from PL 99–198 is attached for the record. EPA and USDA completed their study in 1987, entitled "Effects of Using Unleaded and Low Leaded Gasoline, and Non-lead Additives Designed for Leaded Gasoline." This study revealed serious problems that had to be mitigated during the lead phaseout. We believe a study is also needed on EPA's ultra low sulfur diesel proposal and its potential impacts on the availability and costs of diesel fuel for farmers and rural America as well as any effects on agricultural equipment before the rule is finalized.

ALTERNATIVELY, if the rule is not reconsidered, we recommend that Congress support the following:

- Set a petroleum industry cap of 50 ppm for sulfur in highway diesel fuel, in order to achieve major environmental benefits and avoid extreme costs.
- Provide maximum compliance flexibility. For example, EPA has suggested some potential flexibility by (1) recognizing that refiner co-ops have the same difficulties as small refiners and asking for comment on eligibility for compliance flexibility mechanisms that may be available to small refiners; and (2) permitting a refiner co-op to apply for a compliance extension as a hardship case. NCFC supports these compliance flexibility options, in combination with the 50 ppm standard.
- Should EPA move to an ultra-low standard for sulfur, such as 15 ppm, while compliance flexibility may help during the transition implementation costs will still be excessive. That is why we have argued for the permanence and affordability of the 90? percent reduction in diesel sulfur levels.
- Because the fuel rules for gasoline and on-road diesel are interconnected, and expected to overlap in a narrow timeframe, refiners also need the flexibility to comply with these two rules in the order best achievable for them. Under some circumstances in the gasoline rule, some refiners may not have to fully comply until 2010. We also suggest that we be given until 2010 to comply with both rules.
- Do not require a phase-in or two low sulfur diesel fuels. Local co-ops and farmers cannot afford to add more tanks and pumps.

If the final rule contains these basic elements, we'll work to get the job done.

We look forward to working with the Congress, EPA and other stakeholders to achieve a final rule that is compatible with continued economic viability in American agriculture and environmental progress. Just as farmers need and want cleaner air, we also require reliable and affordable fuel supplies. I urge Congress, on behalf of farmer cooperatives, my Minnesota farm family, and other farm families across rural America, not to let EPA move "too far too fast."

[EXHIBIT, NCFC]

May 9, 2000.

Hon. CAROL BROWNER,
Administrator, U.S. Environmental Protection Agency,
Washington, DC.

DEAR ADMINISTRATOR BROWNER: The undersigned agricultural organizations and others that serve agriculture are deeply concerned that the Environmental Protection Agency's (EPA) proposal to reduce the sulfur levels in diesel fuel could have adverse unintended consequences for American agriculture and rural America. These could come in the form of fuel supply disruptions and excessively higher prices for farmers, for both on-farm and highway fuels, if the proposed rule is implemented as currently drafted.

The EPA draft proposal could (1) increase the threat of supply disruptions, particularly in rural America, by effectively reducing refinery capacity; (2) force many refiners to produce more costly ultra-low sulfur diesel fuel for farm and other off-highway uses due to distribution limitations, particularly in the agricultural heartland; and (3) jeopardize the economic viability of farmer-owned refineries, leading to further concentration in the petroleum industry serving rural America. Costs for farmers and other rural consumers could range from a 5 cents per gallon increase if sulfur levels are set at 50 parts per million (ppm) to 10 cents or more at 15 ppm.

In order to mitigate these potential problems, we strongly urge the agency to (1) set an onroad diesel fuel sulfur cap of about 50 ppm, which would be a 90 percent reduction from the current level; (2) delay and phase in any implementation of a diesel rule until the final gasoline rule has been implemented; and (3) maintain a higher off-highway diesel fuel standard in order to minimize costs to farmers and provide refiners with maximum flexibility to produce diesel fuel.

We support the Administration's clean air accomplishments, but we are concerned that an overly stringent diesel sulfur proposal could unnecessarily harm U.S. agriculture and rural America, particularly during a time of continuing economic hardship that threatens the survival of many farmers and ranchers.

We look forward to working with the Agency to achieve a final rule that is compatible with continued economic viability in American agriculture and environmental progress. Just as our constituents need and want cleaner air, they also require reliable and affordable fuel supplies. We are available to meet with you at any time on this important matter.

Sincerely,[1]

Agricultural Retailers Association
American Crop Protection Association
American Farm Bureau Federation
American Feed Industry Association
American Soybean Association
Agrilink Foods
Cenex Harvest States Cooperatives
Cooperative Refining
Country Energy, LLC
Countrymark Cooperative, Inc.
Farm Credit Bank of Wichita
Farmland Industries, Inc.
GROWMARK, Inc.
Institute of Shortening and Edible Oils
National Association of Wheat Growers
National Corn Growers Association
National Council of Farmer Cooperatives
National Farmers Union
National Grain and Feed Association
National Grange
National Private Truck Council
North American Equipment Dealers Association
Pacific Northwest Grain and Feed Association
Society of American Florists
Southern States Cooperative, Inc.
Tennessee Farmers Cooperative
The Fertilizer Institute

[1] Contains additional organization signatures after May 9 through June 14, 2000.

U.S. Custom Harvesters, Inc.

FOOD SECURITY ACT OF 1985

PUBLIC LAW 99–198—DECEMBER 23, 1985

STUDY OF UNLEADED FUEL IN AGRICULTURAL MACHINERY

SEC. 1765. (a)(1) The Administrator of the Environmental Protection Agency and the Secretary of Agriculture shall jointly conduct a study of the use of fuel containing lead additives, and alternative lubricating additives, in gasoline engines that are——

(A) used in agricultural machinery; and

(B) designed to combust fuel containing such additives.

(2) The study shall analyze the potential for mechanical problems (including but not limited to valve recession) that may be associated with the use of other fuels in such engines.

(b)(1) For purposes of the study required under this section, the Administrator of the Environmental Protection Agency and the Secretary of Agriculture are authorized to enter into such contracts and other arrangements as may be appropriate to obtain the necessary technical information.

(2) The Secretary of Agriculture shall specify the types and items of agricultural machinery to be included in the study required under this section. Such types and items shall be representative of the types and items of agricultural machinery used on farms in the United States.

(3) All testing of engines carried out for purposes of such study shall reflect actual agricultural conditions to the extent practicable, including revolutions per minute and payloads.

(c) Not later than January 1, 1987——

(1) the Administrator of the Environmental Protection Agency and the Secretary of Agriculture shall publish the results of the study required under this section; and

(2) the Administrator shall publish in the Federal Register notice of the publication of such study and a summary thereof.

(d)(1) After notice and opportunity for hearing, but not later than 6 months after publication of the study, the Administrator shall——

(A) make findings and recommendations on the need for lead additives in gasoline to be used on a farm for farming purposes, including a determination of whether a modification of the regulations limiting lead content of gasoline would be appropriate in the case of gasoline used on a farm for farming purposes; and

(B) submit to the President and Congress a report containing——

(i) the study;

(ii) a summary of the comments received during the public hearing (including the comments of the Secretary); and

(iii) the findings and recommendations of the Administrator made in accordance with clause (1).

(2) The report shall be transmitted to——

(A) the Committee on Energy and Commerce of the House of Representatives;

(B) the Committee on Environment and Public Works of the Senate;

(C) the Committee on Agriculture of the House of Representatives; and

(D) the Committee on Agriculture, Nutrition, and Forestry of the Senate.

(e)(1) Between January 1, 1986, and December 31, 1987, the Administrator shall monitor the actual lead content of leaded gasoline sold in the United States.

(2) The Administrator shall determine the average lead content of such gasoline for each 3-month period, between January 1, 1986, and December 31, 1987.

(3) If the actual lead content falls below an average of 0.2 of a gram of lead per gallon in any such 3-month period, the Administrator shall——

(A) report to Congress; and

(B) publish a notice thereof in the Federal Register.

(f) Until January 1, 1988, no regulation of the Administrator issued under section 211 of the Clean Air Act (42 U.S.C. 7545) regarding the control of prohibition of lead additives in gasoline may require an average lead content per gallon that is less than 0.1 of a gram per gallon.

(g) To carry out this section, there is authorized to be appropriated $1,000,000, to be available without fiscal year limitation.

STATEMENT OF DAVID S. ADDINGTON, SENIOR VICE PRESIDENT FOR LAW & REGULATORY AFFAIRS, AMERICAN TRUCKING ASSOCIATIONS, INC.

Mr. Chairman and members of the subcommittee: We appreciate the opportunity to appear before you today to express our serious concerns with the new regulations on diesel engines and fuel proposed by the EPA on June 2, 2000.[1]

The membership of ATA, like other Americans, supports the objective of clean air. We believe the Government should base its clean air efforts on sound science, public safety, and the needs of the American economy.

I will describe the trucking industry, and some key problems that the EPA rule poses for the industry and the American economy.

ATA AND THE TRUCKING INDUSTRY

The American Trucking Associations is the national trade association for the trucking industry, with more than 2500 motor carrier company members who operate in every State in the Union.

Trucking is vital to the Nation's economy. Trucks move the majority of the freight that moves in America. Seventy percent of America's communities depend exclusively on trucks for freight service. EPA regulations affecting trucking operations have a direct impact on a huge segment of the American economy.

Although some trucking companies are multi-billion dollar companies whose names you know, most of the trucking industry is small business. According to the Department of Transportation, almost 50 percent of motor carriers have only one truck, and a full 95 percent of motor carriers, almost 395,000 of them, have 20 or fewer trucks.[2]

EPA PROPOSAL: DISCRIMINATORY—UNPROVEN—COSTLY

The EPA proposal has 3 major problems. It discriminates against on-road sources of diesel in favor of off-road; it bets our future on unproven technologies; and it forces substantial costs on the trucking industry and the economy.

Regarding discrimination, off-road sources of diesel emissions—such as locomotives, boats, utilities, and generators—produce much more of the troublesome emissions than on-road sources. Yet, EPA has singled out the diesel-fueled truck for tighter restrictions. EPA's decision to single out on-road diesel emissions sources is unjustified—indeed, EPA did not even try to justify it. EPA simply said they "plan to initiate action in the future to formulate thoughtful proposals covering both nonroad diesel fuel and engines."[3] The EPA should initiate a thoughtful proposal *now* and cover non-road diesel emissions sources.

The trucking industry has contributed substantially to air quality improvements in the U.S. in the past decade. It is time for others to do as much as we have already done.

On technology, EPA wants trucks to employ after-treatment methods to reduce emissions, employing technology that is not field-tested and proven. EPA is placing a risky bet that 5 years from now the technology will be ready to go. EPA should not impose radical changes in diesel engine and diesel fuel standards unless and until it knows that the necessary technology works.

On cost, the EPA's own estimates say the proposed rule will add $2,768 to the cost of a new heavy-duty truck and, over the life-cycle of the truck, another $3,362 dollars—for a total of more than $6,000 per truck.[4] EPA also says its rule will add about 4 cents to the cost of a gallon of highway diesel fuel.[5] Even these EPA estimates of the increased truck cost and increased fuel cost would be difficult for many in the trucking industry to bear, but the refining industry tells us that EPA actually has grossly underestimated the increase in the price of the fuel.

Finally, the refining and distribution industries have told us that it will be extremely difficult to maintain the purity in distribution of the new on-road diesel fuel, and that they cannot guarantee uniform, nationwide availability of the product. If the new fuel is not available everywhere like the old fuel, it will be a disaster for the trucking industry and the economy as a whole.

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[1] "Control of Air Pollution from New Motor Vehicles; Proposed Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements," 65 Fed. Reg. 35430 (June 2, 2000).

[2] Federal Motor Carrier Safety Administration, Docket Item FMCSA 1997–2350–954, Preliminary Regulatory Evaluation (Truck Driver Hours of Service), page 60, paragraph 3.

[3] 65 Fed. Reg. 35430, 35438.

[4] 65 Fed. Reg. at 35490, Table V.A–1.

[5] 65 Fed. Reg. at 35493.

CONCLUSION

Mr. Chairman, the subcommittee asked me to address the EPA rules on diesel engines and fuel, and I am pleased that we had that opportunity. But I would be remiss if I did not draw to your attention that this rule is only one front of the current three-front regulatory war that the Administration is waging on the trucking industry. Like the diesel rule, the rules on the other two fronts—the Department of Transportation's proposed rule on truck driver hours of service and OSHA's proposed rule on ergonomics—also are based on flawed science, flawed economics, and unfair Government favoritism toward our industry's competitors.

On all three fronts—hours of service, ergonomics, and diesel—the trucking industry faces extraordinary costs as a result of Government mandates. Because the economy has been so good, to so many Americans, in the past decade, many people overlook the fact that margins in the trucking industry have been extremely low. Trucking companies that already have a tough time meeting the payroll and making any money simply cannot bear the cost of new regulations that the Administration wants to impose in its closing days on our industry.

We appreciate the opportunity to appear before you and would be pleased to answer questions.

STATEMENT OF BRUCE BERTELSON, MANUFACTURERS OF EMISSION CONTROLS ASSOCIATION

Good morning. My name is Bruce Bertelsen and I am the Executive Director of the Manufacturers of Emission Controls Association. MECA is pleased to have the opportunity to participate in today's hearing on the proposed highway sulfur diesel requirement and how it relates to the important issue of reducing emissions from diesel-powered engines and vehicles. We believe an important opportunity exists to significantly further reduce emissions from highway heavy-duty diesel engines by utilizing an engineered systems approach which incorporates and combines advanced engine designs, advanced emission control technology, and very low sulfur diesel fuel. EPA's recently proposed regulatory initiative recognizes the importance of promoting this systems-type approach and we believe the Agency's proposal constitutes a carefully crafted program that, if finalized, will bring about the era of the truly clean diesel engine. Achieving the goal of the clean diesel engine presents significant challenges to the engine manufacturers, the emission control manufacturers and the oil industry, but we believe that, by working together, these challenges can and will be met.

MECA is a non-profit association made up of the world's leading manufacturers of motor vehicle emission controls. MECA's member companies have over 30 years of experience and a proven track record in developing and commercializing exhaust control technologies for motor vehicles. A number of our members have extensive experience in the development, manufacture, and commercial application of emission control technologies for diesel heavy-duty engines.

Our comments today are based on work being performed by our members, their extensive experience in the field of motor vehicle catalysis, and a growing body of technical data that is beginning to emerge from such programs as the joint government/industry DECSE Program.

TECHNOLOGICAL FEASIBILITY OF MEETING THE PROPOSED DIESEL HDE STANDARD

We believe the emission standards of 0.2 g/bhp-hr NO_X and 0.01 g/bhp-hr particulate (PM) proposed for highway diesel-powered heavy-duty engines can be achieved in a cost-effective manner within the lead-time provided, if very low sulfur diesel fuel is available. EPA, in its proposal, identified two candidate technologies for meeting the proposed emission limits—catalyst-based diesel particulate filters for particulate (PM) control and NO_X adsorber technology for oxides of nitrogen (NO_X) control. EPA also cites SCR as a NO_X control option.

THE NEED FOR VERY LOW SULFUR DIESEL FUEL

Sulfur in fuel adversely affects the performance of all catalyst-based emission control technologies. The impacts range from reducing the effectiveness of these controls to rendering certain catalyst-based controls ineffective. While we continue to recommend that EPA establish a sulfur cap of 5 ppm, our members believe that with a sulfur cap of 15 ppm emission control strategies can be developed to meet the proposed emission limits. Specifically, with a 15 ppm cap our members are extremely confident that all catalyst-based filter technologies can be designed to help meet levels of 0.01 g/bhp-hr PM over the full regulatory useful life (435,000 miles)

of the engine and that NO_X adsorber technology will be optimized to meet the 0.2 g/bhp-hr NO_X standard.

Catalyst-Based Diesel Particulate Filters.—Diesel particulate filters are commercially available today; the only remaining engineering effort is to optimize the filter systems for the specific engine to which they will be applied. Worldwide, over 20,000 PM filters have been equipped on diesel engines. With a sulfur cap of 15 ppm, our members are extremely confident all catalyst-based filter technologies can be designed to meet levels of 0.01 g/bhp-hr PM control over the full regulatory useful life of the engine.

In addition to an increase in sulfate, the level of sulfur in diesel fuel adversely affects the temperature level at which regeneration of the filter occurs. Achieving the exhaust temperatures needed to bring about filter regeneration is an engineering challenge, even for a fully optimized engine/filter system depending on the engine design, engine application, and ambient temperatures. Failure to achieve proper regeneration can adversely affect performance and the durability of the filter system. Therefore, the impact of sulfur in raising the regeneration temperature can be very problematic. Operating experience with filter technology in Europe with <10 ppm sulfur diesel fuel demonstrates that proper filter regeneration will occur, even when vehicles are operated in areas such as Sweden, where low seasonal ambient temperatures do occur.

NO_X Adsorber Technologies.—Development and optimization work with NO_X adsorber technology is progressing at a rapid rate, and our members believe that with the availability of very low sulfur diesel fuel, this technology will be commercialized in the 2007 timeframe for diesel engines. While sulfur levels above 5 ppm present additional design challenges for NO_X adsorber technology, companies that are developing this technology believe that with the considerable R&D efforts already underway, NO_X adsorber technology will be optimized to operate with a cap of no higher than 15 ppm.

SCR Technology [continuing]. SCR technology is being developed for commercial application on motor vehicles in the very near future. The technology is achieving significant NO_X reductions and is also capable of reducing HC emissions and PM. SCR technology, which utilizes an oxidation catalyst to facilitate NO_X reduction to achieve high control efficiencies, requires the same low sulfur levels as the NO_X adsorber technology. Other SCR technology designs are less sensitive to sulfur, but even for these technologies, very low sulfur fuel allows the technologies to achieve the highest NO_X reductions and allows for the full optimization of the engine/exhaust control technology system.

CONCLUSION

We believe, working together, the objective of the truly clean diesel engine can be achieved. Our industry is prepared to make the necessary investments to help insure that the desired emission reduction are achieved.

I would be happy to answer any questions. Thank you.

STATEMENT OF JAMES A. HASLAM III, PILOT OIL CORPORATION, ON BEHALF OF THE SOCIETY OF INDEPENDENT GASOLINE MARKETERS OF AMERICA

Good morning Mr. Chairman and members of the subcommittee. My name is Jimmy Haslam. I am Chief Executive Officer of Pilot Oil Corporation, a family owned private company headquartered in Knoxville, TN. Thank you, Mr. Chairman, for inviting me to testify today on the Environmental Protection Agency's proposed regulations to reduce on-road diesel fuel sulfur levels.

Pilot was started by my father in 1958. We do not make diesel fuel—we sell it. Our company currently owns and operates 180 travel centers and convenience stores in 37 States stretching from Connecticut to California, northward to Wisconsin, and south to Florida and Texas. We employ over 7,000 people nationwide and sold approximately 10 percent of all the on-road diesel fuel in the United States last year. As a result, Pilot is the largest independent retailer of on-road diesel fuel in the Nation.

I appear before this subcommittee today on behalf of the Society of Independent Gasoline Marketers of America. SIGMA is an association of approximately 260 motor fuels marketers operating in all 50 States. Together, SIGMA members supply over 28,000 motor fuel outlets and sell over 48 billion gallons of gasoline and diesel fuel annually—or approximately 30 percent of all motor fuels sold in the Nation last year. Collectively, SIGMA members sold over 13 billion gallons of on-road diesel fuel last year, and 89 percent of our members sell diesel fuel.

My personal experience with Pilot and my representation of all SIGMA members at this hearing today combine to make me well qualified to speak about the EPA's diesel sulfur proposal—not just from the diesel fuel marketers' perspective, but from the perspective of diesel fuel consumers as well. From the point of view of diesel fuel marketers and our customers, EPA's proposal will have dire consequences on our business, on our customers, and, potentially, on our national economy.

SIGMA urges the members of this subcommittee, as well your Senate colleagues, to join in strong condemnation of EPA's proposal. SIGMA strongly opposes the proposal for one fundamental reason: it will reduce—perhaps substantially—the supplies of on-road diesel fuel.

Diverse and plentiful sources of supply are the life's blood of independent petroleum marketers like Pilot. Without adequate supplies of diesel fuel, independent marketers—the most competitive segment of the motor fuels marketing industry—will cease to exist as a force in diesel fuel retailing. Currently, independent marketers have been able to rely consistently on numerous independent and integrated refiners to assure our sources of supply. However, if the sources of supply or the numbers of suppliers are restricted, independent marketers are forced to look toward integrated refiners—in many cases our strongest competitors—for diesel fuel supplies. When integrated refiners are aware that an independent marketer has many other sources of supply, then the integrated refiners are forced to be competitive. When sources of supply narrow, however, there are no such forces acting on the integrated refiners.

EPA's diesel sulfur proposal will result in a substantial decrease in the overall supplies of on-road diesel fuel in this country. As EPA admits in its proposal, some refiners will not be able to make the capital investments necessary to produce ultra-low sulfur diesel fuel—resulting in reduced diesel fuel supplies. EPA also admits that desulfurization technology currently does not exist to remove sufficient sulfur from certain diesel fuel blendstocks—reducing supply. EPA further admits that our nation's diesel fuel distribution system will be forced to "downgrade" an unspecified portion of our nation's diesel fuel production because it will become contaminated with higher sulfur products during distribution—again, reducing overall supplies. And EPA highlights the fact that, under the proposal, domestic diesel fuel will have a substantially lower sulfur level than diesel fuel produced in most other industrialized countries—which will prevent foreign supplies of diesel fuel from alleviating any shortage in domestic production.

Independent marketers of diesel fuel will not be the only ones to suffer under EPA's proposal. Consumers of diesel fuel, including our nation's trucking and agricultural industries, will pay for EPA's program at the pump. EPA predicts in its proposal that diesel sulfur reductions will cost approximately four and one half cents per gallon. That number is woefully low. As we witnessed this past winter and spring in the Northeast, even small supply shortages of diesel fuel and heating oil can cause dramatic increases in retail prices. If overall diesel fuel supplies are reduced by 10 percent as a result of EPA's proposal—which I believe is not an unreasonable prediction given the refiners I have talked with—then the $2 per gallon diesel fuel prices we saw in the Northeast last winter will become the norm, if not a bargain in the eyes of consumers.

Given the extent to which our nation relies on diesel fuel to power our on-road commercial transportation network, the ultimate impact of these price increases and diesel fuel shortages will be felt by the economy as a whole through increased transportation costs and inflation. While the current staff at EPA may not care about this impact of their proposal on the future of our economy because these impacts will occur long after this Administration has left office, I suspect that many of the members of this subcommittee plan to be serving their constituents in Congress in 2006 and will be present when the repercussions from this ill-considered proposal are felt by consumers and our economy.

SIGMA would bring this subcommittee's attention to an issue contained in the preamble to EPA's proposal that is not currently a formal part of its draft regulations. In the preamble, EPA requests comments on adopting a regulatory scheme that would permit two on-road diesel fuels to exist for a short period of time. EPA envisions that refiners would make some ultra-low sulfur diesel fuel for several years and continue also to supply the current low sulfur on-road diesel fuel during this transition period.

This EPA proposal should be roundly criticized and discarded. EPA, in its attempt to make its drastic proposal on diesel sulfur reductions seem reasonable, has floated this idea of dual on-road diesel fuels. As the nation's largest independent retailer of on-road diesel fuel, I must tell you that this proposal would be disastrous for our industry and the nation's motor fuel distribution system. This dual fuel proposal would force Pilot and other diesel fuel marketers into one of the following scenarios:

(1) add an additional underground or aboveground storage tank and dispenser system to hold and pump the second grade of on-road diesel; or, (2) retail only ultra-low sulfur diesel fuel at a time when only a small percentage of our customers would require it and risk losing customers to competitors that choose to sell the cheaper, low sulfur diesel fuel.

At the vast majority of our company's 180 locations, we have very limited storage for diesel fuel—at most sites, our tanks hold less than 24 hours of supply. In many instances, we would not have room at our sites to install additional tankage, even if we could get the permits to do so. Even if we could install the additional tanks, it appears from EPA's proposal that a second on-road diesel fuel would be phased out within 5 years, making our investment in that additional tank unnecessary and a wasted investment. While Pilot does not own or operate bulk storage terminals, I would assume that such a dual fuel approach would tax storage and distribution assets at the terminal level of distribution as well.

As a result, I urge the members of the subcommittee to communicate to EPA your opposition to the Agency's dual fuel approach. While EPA has attempted to portray this idea as a means of easing the burdens of the program on refiners and marketers, it in fact will greatly increase the costs of the proposed program if it is implemented.

SIGMA would support a diesel desulfurization program that: (1) takes effect in 2010 or later to permit adequate time for the proposed experimental emissions control and diesel desulfurization technologies to mature and develop, and gives refiners additional time to install these new technologies; (2) sets a diesel sulfur cap at 50 ppm, rather than the 15 ppm cap that EPA's proposal would mandate; and, (3) establishes a uniform transition to the new lower sulfur diesel fuel without a dual fuel approach. An EPA regulation that adheres to these three principles would have only a minimal impact on overall diesel fuel supplies while reducing diesel sulfur levels by 90 percent and achieving substantial reductions in emissions from heavy duty diesel engines. In addition, the longer implementation timeframe would permit the manufacturers of emissions control devices to develop their technologies to a level at which a 50 ppm sulfur level would not have a negative impact on emissions.

I appreciate the opportunity to present SIGMA's views to this subcommittee. I would be pleased to answer any questions raised by my testimony.

STATEMENT GLENN KELLER OF THE ENGINE MANUFACTURERS ASSOCIATION

Good Morning. My name is Glenn Keller and I am the Executive Director of the Engine Manufacturers Association. The Association, headquartered in Chicago, Illinois, represents the worldwide manufacturers of internal combustion engines used in all applications except passenger cars and aircraft. Among EMA's members are the principal manufacturers of truck and bus engines covered by EPA's proposed 2007 rulemaking imposing additional regulatory controls on heavy-duty engines while limiting the sulfur content of diesel fuel used in these engines.

The diesel-fueled engine is the backbone of our nation's transportation system, from delivering produce to our local groceries to powering our mass transit systems in our nation's cities and towns. The diesel engine can be as clean, if not cleaner, than any other power source. It is capable of meeting emission standards more than 90 percent below today's levels. And emissions from today's engines have already been reduced by over 90 percent. We recognize that more, much more in fact, can and should be done * * * and we are poised to meet that challenge by the end of this decade.

The key to achieving these future stringent emissions reductions is to reduce the sulfur content of diesel fuel. As the Environmental Protection Agency acknowledged in its proposed rule, future emissions reductions require a systems approach involving the engine, aftertreatment and fuel. Fuel quality, one leg of this three-legged emissions reduction strategy, enables the technologies necessary to make the other two stand.

Without removing essentially all the sulfur from diesel fuel, advanced NO_X aftertreatment devices will not be feasible; advanced PM aftertreatment will be poisoned; and engines will be exposed to excessive wear, increased maintenance costs, and impaired durability. I cannot emphasize enough the critical importance of ultra-low sulfur fuel: it enables substantial NO_X emission reductions; it provides direct PM emission reductions for every vehicle; and it provides benefits not just from new engines, but from the entire fleet of diesel-fueled vehicles.

Improved diesel fuel also has a role in responding to concerns over potential health effects. Ultra-low sulfur fuel lowers the total mass of particulate from the entire fleet and enables the use of known aftertreatment technologies, such as oxida-

tion catalysts, which can reduce the organic fraction of PM emissions. A rule that calls for ultra-low sulfur fuel also enables the application of catalyst-based technologies to reduce NO_X that, in turn, will reduce the secondary formation of fine particles of concern in our urban air.

We applaud EPA for recognizing the critical role of fuel sulfur. We strongly support the need for a uniform, nationwide low sulfur fuel standard with a hard cap on maximum sulfur content. Regional differences in sulfur content will not allow the systems approach necessary to meet EPA's very stringent NO_X and PM emission levels. Further, a hard cap on sulfur is critical. Averages simply will not work. They are difficult and impractical to enforce. Moreover, the engine and aftertreatment legs of the stool must be assured of never being exposed to high sulfur fuel.

In our view, a 15 ppm sulfur limit does not go far enough. Our cooperative testing programs have indicated the extreme sensitivity of aftertreatment devices to sulfur poisoning. Therefore, EMA advocates an even lower limit of 5 ppm sulfur in diesel fuel to ensure we are delivering the maximum performance of these devices for the useful life of the truck engine, which is up to 435,000 miles. And, diesel fuel improvements shouldn't only be limited to trucks and buses. Non-road fuels also must be similarly improved.

We are aware of the various arguments raised by the oil industry against improving fuel quality. They don't want to reduce sulfur to even 15 ppm, let alone to lower levels. Nationwide ultra-low sulfur fuel can—no, *must*—be achieved, and it can be done cost effectively. In a joint project with the American Petroleum Institute and the National Petroleum Refineries Association, the Engine Manufacturers Association contracted with MathPro, a renown refining consultant, to estimate the cost of producing ultra-low sulfur fuel. MathPro concluded that the typical refining cost to produce a 5 ppm maximum sulfur fuel was from 5½ to 9 cents per gallon for the most severe sulfur scenario which modeled a 2 ppm average across the entire diesel pool. Mr. Chairman, we ask that the entire MathPro Study be included with this statement in the hearing record.

So today we are enthusiastic and hopeful about the bright future ahead for diesel engines and our industry's ability to produce reliable, durable, fuel efficient, high performing diesel engines that also are as clean or cleaner than any other power source. There will be issues along the way and a great deal of work to be done. But it is no longer a question of 'IF'. With nationwide ultra-low sulfur diesel fuel and a little development time, engine manufacturers have the resources to achieve the stringent emission goals set forth in EPA's proposal.

I would be pleased to respond to any questions the subcommittee might have.

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